



VICEREGAL LIBRARY.

DATE 1936

•

WAR OVER ENGLAND

•



The Symbolism of War

WAR OVER ENGLAND

BY

AIR COMMODORE L.E.O. CHARLTON,
C.B., C.M.G., D.S.O.

WITH ILLUSTRATIONS

LONGMANS, GREEN AND CO.
LONDON ◊ NEW YORK ◊ TORONTO

LONGMANS, GREEN AND CO. LTD.

**39 PATERNOSTER ROW, LONDON, E.C.4
6 OLD COURT HOUSE STREET, CALCUTTA
53 NICOL ROAD, BOMBAY
36A MOUNT ROAD, MADRAS**

LONGMANS, GREEN AND CO.

**114 FIFTH AVENUE, NEW YORK
221 EAST 20TH STREET, CHICAGO
88 TREMONT STREET, BOSTON**

LONGMANS, GREEN AND CO.

215 VICTORIA STREET, TORONTO

First published 1936

PRINTED IN GREAT BRITAIN

PREFACE

THIS book is all about sky warfare, more particularly in its relation to the civil population on earth beneath. It is written in three Parts. Part I is of the past and deals exclusively with the air raids over England during the Great War. Part II is of the present and describes what would happen to-day if war were again unleashed. Part III is of the future and attempts to set before the mind's eye the conditions of life, both in peace and in war, of a people such as we, peace-loving and complete, who must nevertheless go armed against sudden attack from above.

This picture of what may come is fanciful, but not extravagantly so. No impossibilities have been invented. In fact, if civilization and the arts survive, a person who might come across this book in some dusty cellar, or in the vaults of some weeded-out municipal library, round about, say, the year A.D. 2000, may marvel at the prophetic moderation displayed by the author in his attempt to envisage the future.

Time marches on and fewer each day get those who still can speak from personal knowledge of the air raids. Throughout the War the Zeppelin flights covered no more than half the area of England. Scotland was little affected; Wales and Ireland not at all. As for the raiding aeroplanes, the Gothas and the Giants, they followed a beaten path by daylight and by moonlight which never took them further afield than South Essex and Kent on their way in and out over London. Those who saw the raiding aircraft with their own eyes, or

PREFACE

heard the rending tear of the bursting bombs, or visited subsequently the scenes of havoc, are not a large proportion of the present population. It is probable that they do not exceed thirty per cent. Thirty-five millions of persons, old and young, out of a grand total verging on fifty, thus have only hearsay knowledge, if any at all, of those dark days. On such a broad base of ignorance apathy is born, and the main mass of the people, in consequence, are completely uninstructed on a subject which will vitally affect each one. That subject is the fearful menace of air power, and the purpose of the book is to describe it.

As regards Part I, the historical section, there are acknowledgements to make. In particular I am indebted to H. A. Jones's *The War in the Air*, which is, in effect, the framework of the whole. It is the standard book on the subject and no student of the period can afford to neglect it. It combines an intensely readable account with an arrangement particularly useful for research, and it is wholly authoritative. Otherwise, mention must be made of *Records of the Raids* by the Bishop of Stepney; *The Zeppelins* by Lehmann and Mingos; *The German Air Force in the Great War* by Major Georg Paul Neumann; *Air Defence* by General E. B. Ashmore; Macdonough's *In London During the Great War*; and certain articles by Hamilton Fyfe in the serial publication *War in the Air*. The *Evening News* series of "Stories of the Raids," 31st January to 12th March, 1935, provided much matter of human interest.

For Part II and III I accept entire responsibility.

L. E. O. C.

CONTENTS

	PAGE
PREFACE	v

PART I

THE STORY OF THE AIR RAIDS

CHAP.

I. MEMORY SKETCH	3
II. DISSERTATION ON AIRSHIPS	23
III. CHRONICLE OF THE RAIDS: FIRST PERIOD	36
IV. CHRONICLE OF THE RAIDS: SECOND PERIOD	53
V. CHRONICLE OF THE RAIDS: THIRD PERIOD	68
VI. CHRONICLE OF THE RAIDS: FOURTH PERIOD	81
VII. "ARMA VIRUMQUE"	99
VIII. "VAE VICTIS"	113
IX. FROM THE MERE GROUNDLING POINT OF VIEW	125

PART II

A SHORT HISTORY OF THE NEXT WAR

I. THE FIRST BLOWS	153
II. THE DOCKLAND ATTACK	170
III. PARLIAMENT MEETS	185
IV. THE DAY AND NIGHT OF SUNDAY	201
V. THE END OF A PERFECT WAR	219

CONTENTS

PART III

THE LAST WAR

CHAP.	PAGE
I. RESTORATION PERIOD	237
II. RECONSTRUCTION OF DEFENCE	249
III. ENGLAND READY	261
IV. ALMOST THE DEATH OF CIVILIZATION	275

ILLUSTRATIONS

THE SYMBOLISM OF WAR	<i>Frontispiece</i>
GERMAN OBSERVER TAKING BOMBS ON BOARD	
GERMAN ZEPPELINS L.I3, L.I2 AND L.I0 STARTING ON A FLIGHT	
GERMAN ZEPPELIN L.II FLYING OVER A T.B. DESTROYER IN THE NORTH SEA, 1915	
ANTI-AIRCRAFT GUN IN ACTION AT NIGHT	
ANTI-AIRCRAFT GUN (13-pdr. 9 cwt.) MOUNTED ON A MOTOR-LORRY, FIRING	
A DAYLIGHT RAID ON LONDON, 7TH JULY, 1917. PAINT- ING BY N. G. ARNOLD	
AN OCTOBER NIGHT RAID ON LONDON, 1917. PAINTING BY N. G. ARNOLD	
THE BALLOON APRON. PAINTING BY FRANK DOBSON	
"TAKING COVER" IN A TUBE STATION DURING A LONDON AIR RAID. PAINTING BY WALTER BAYES	
CHANCERY LANE, W.C. 14TH OCTOBER, 1915	
GREEN PARK, W.	
SHAP STREET, HOXTON, E.	
CARPENTERS ROAD, STRATFORD, E.15	
ZEPPELIN RAID, 19-20TH OCTOBER, 1917. OUTSIDE MESSRS. SWAN & EDGAR'S SHOP, PICCADILLY	
AEROPLANE RAID, 7-8TH MARCH, 1918. 61-67 WARRING- TON CRESCENT, ST. JOHN'S WOOD	
STRAND THEATRE, W.C. 14TH OCTOBER, 1915	

Preceding page 1 of the text

ILLUSTRATIONS

93, LONG ACRE, W.C. MESSRS. ODHAMS PRINTING WORKS. AEROPLANE RAID, 28-29TH JANUARY, 1916 . . .	} Preceding page 1 of the text
ALDGATE HIGH STREET, 14TH OCTOBER, 1915 . . .	
THAMES EMBANKMENT. AEROPLANE RAID, 4-5TH SEPTEMBER, 1917	
BEDFORD HOTEL, SOUTHAMPTON ROW, W.C.	
WRECK OF ZEPPELIN L.33 AT LITTLE WIGBOROUGH, BROUGHT DOWN ON 23RD SEPTEMBER, 1916 . . .	
ZEPPELIN L.12 BEING TOWED INTO OSTEND ON 15TH AUGUST, 1915, EXTENSIVELY DAMAGED . . .	

(All the above illustrations are from originals in the Imperial War Museum)

	FACING PAGE
R.A.F. DISPLAY AT HENDON (<i>Royal Air Force Official— Crown copyright reserved</i>) . . .	170
LONDON DOCKS (<i>Photo : Aerofilms</i>)	} 158
LOTS ROAD (CHELSEA) POWER STATION (<i>Photo : Aerofilms</i>) . . .	



German observer taking bombs on board

1918



German zeppelins L.13, L.12 and L.10 starting on a flight



German zeppelin L11 flying over T.B. Destroyer in North Sea, 1915



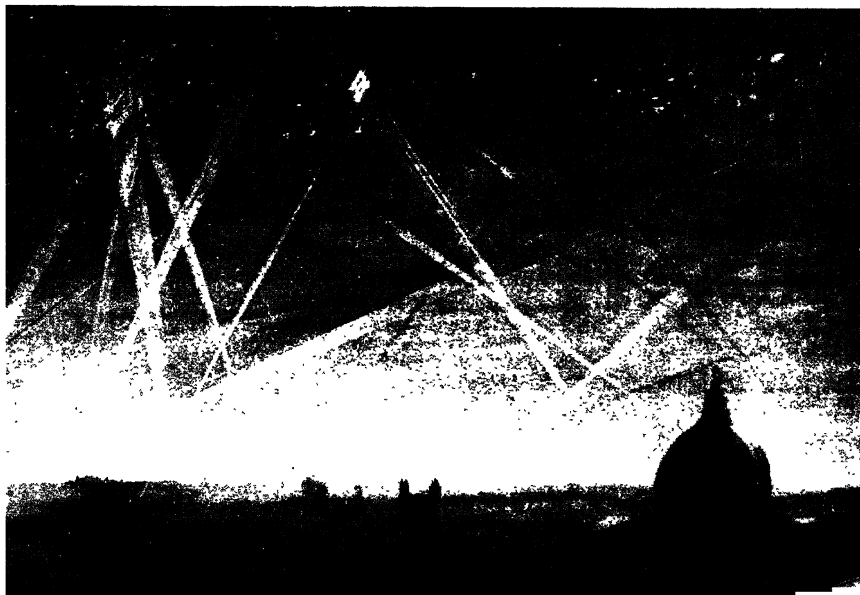
ANTI-AIRCRAFT GUN MOUNTED ON LORRY

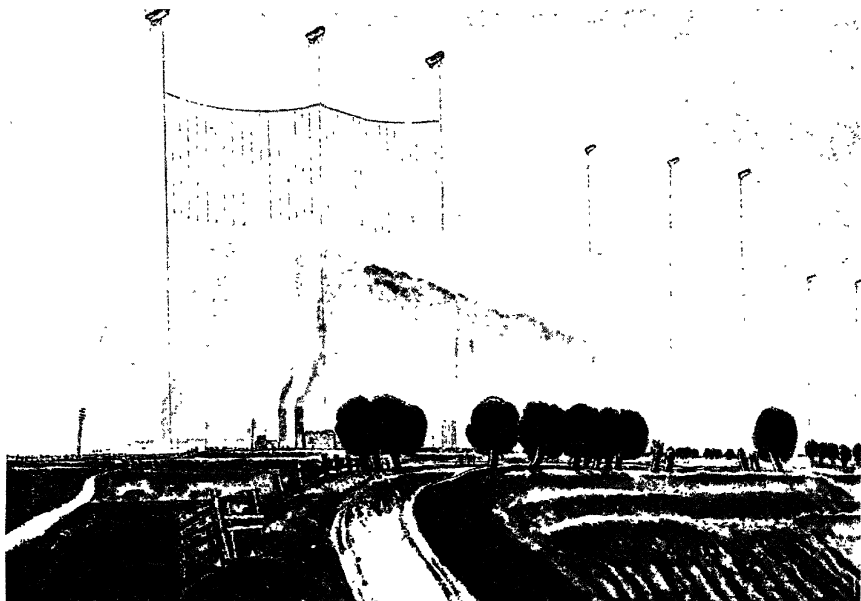


ANTI-AIRCRAFT GUN IN ACTION



A daylight raid on London, 7th July, 1917. Painting by N. G. Arnold

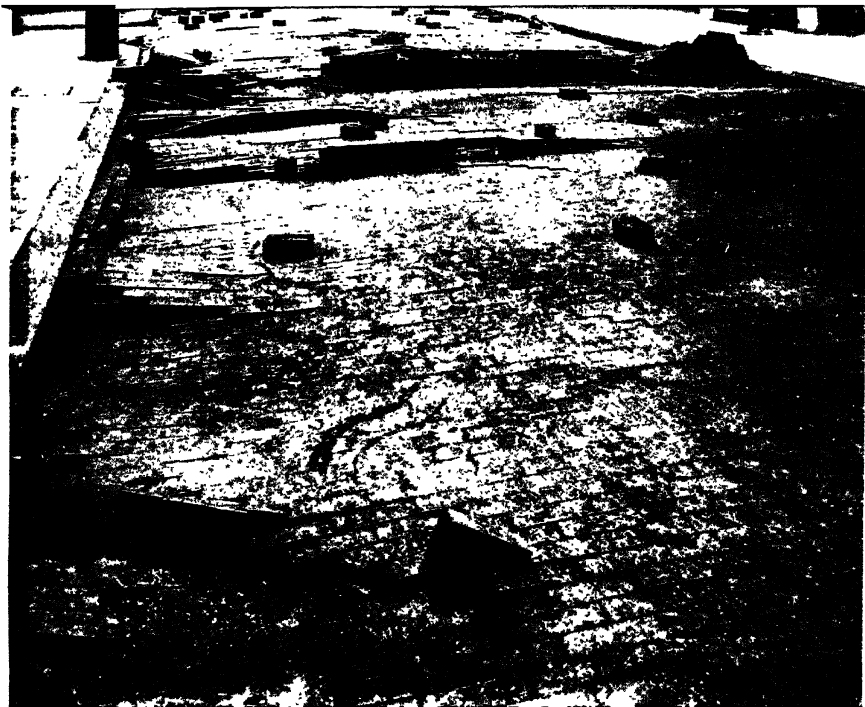




The Balloon Apron. Painting by Frank Dobson



"Taking cover" in a tube station during a London air raid
Painting by Walter Bayes



Chancery Lane, W.C. 14th October, 1915



Green Park, W.



SHAP STREET, HOXTON, E.

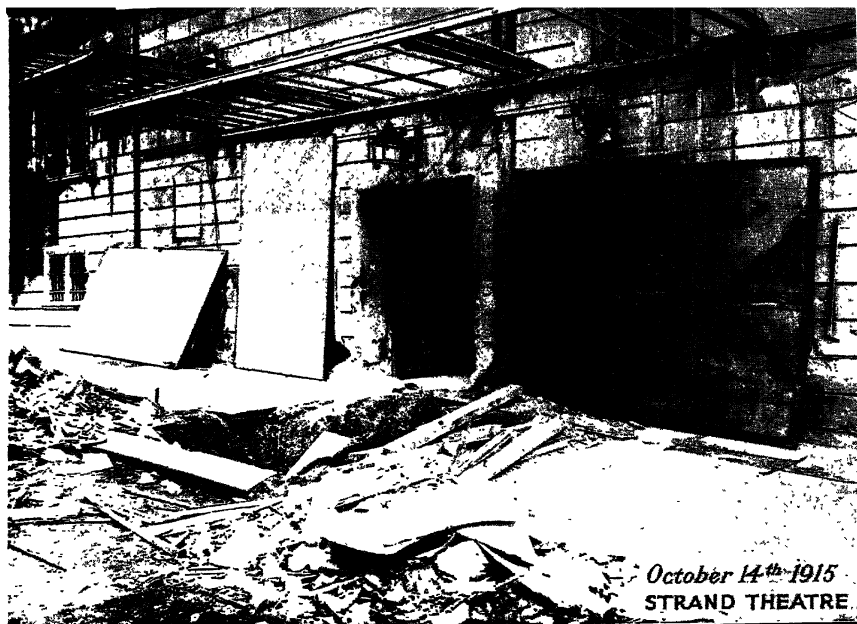




October 19th and 1917
SWAN & EDGAR'S SHOP, PICCADILLY.



March 7th & 8th 1918



October 14th 1915
STRAND THEATRE



January 28th & 29th 1916
ADAMS' PRINTING WORKS



Aldgate High Street, 14th October, 1915



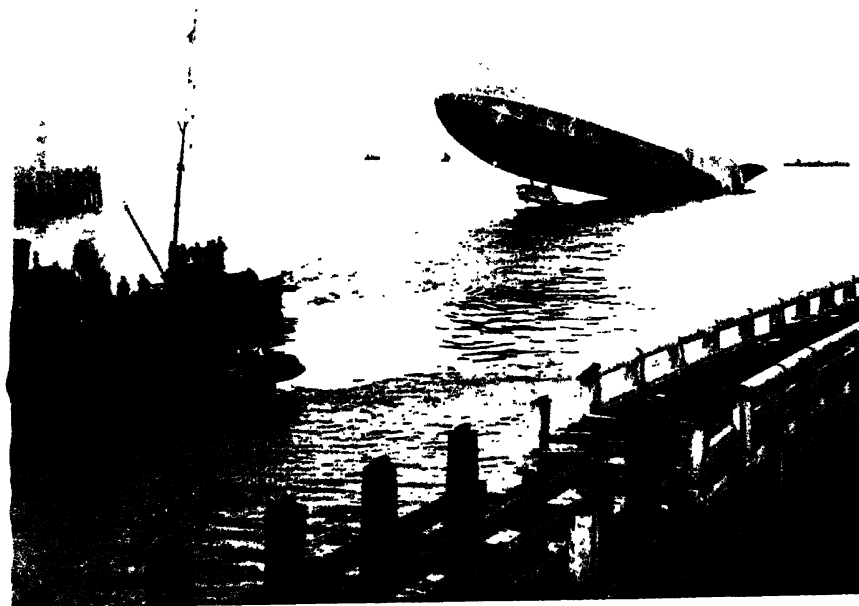
Thames Embankment. Aeroplane raid, 4-5th September, 1917



Bedford Hotel, Southampton Row, W.C.



Wreck of zeppelin L.33 at Little Wigborough, brought down on 23rd September, 1916



.

PART I
THE STORY OF THE AIR RAIDS

CHAPTER ONE

MEMORY SKETCH

I

WHEN, at the outbreak of the Great War, the people of these Isles in general, and Londoners in particular, had recovered from an exuberance of spirit consequent on the fact in itself, the slogan "business as usual" became the watchword of the day and the non-military element of the population went on with their buying and selling in the accustomed way of commerce.

Everyone, naturally, was prepared for a different atmosphere to that of piping peace in the coming and the going and in the pursuit of lawful occasion. The fervour of enlistment was very high for one thing, and Dame Rumour was very much abroad for another. Parties of straw-hatted young men, from among the hundreds and the thousands who offered themselves, were continually being conducted in ragged column of fours from recruiting-office to training-centre amid the patriotic cheering of the onlookers, and much to the admiration of their long-skirted sweethearts and wives.

The Alien Registration Act largely affected the former relationship of neighbours and friends, and food-hoarding suspects were apt to be roughly handled by the mob.

There was also a settled gloom at the appearance of the first casualty lists after the retreat from Mons, further deepened by the ominous silence from France. No news was considered

bad news and the emptiness was filled by flying rumour, always of an alarmist tendency.

Yet on the whole the public at home refused to lose confidence in the Government and in the military and naval direction of affairs. They were fortified by the magic of the name of Kitchener and they were deeply conscious of the righteousness of their country's cause. It was recalled with pride by letter-writers to the Press that war on the continent of Europe with British troops participating had not been wont unduly in the past to disturb public life in England, so why should this one prove an exception to the rule. In any case it was not likely to last more than six months.

As for invasion, the bare idea was scouted as a sheer impossibility. Was not the greatest fleet the world had ever seen in being to protect our shores, and was not the system of coastal defence complete? On that score at least the citizen could sleep abed of nights and walk abroad unfearing by day. Whatever the fortune overseas, the soil of England would at any rate remain inviolable.

Not since England, in the time of the second Henry, had become a racial whole had the foot of a foreign foe been set down in her land. The Dutch Admiral, de Ruyter, it is true, sailed up the Thames as far as Chatham on 13th June, 1667, and burnt our fleet at anchor; King Charles II being at the time engaged in moth hunting after supper with the Lady Castlemaine. The event was unprecedented and a national disgrace, but the attack had not been followed by a landing and the soil remained untrodden.

A scare of Napoleonic invasion had certainly existed in the year 1805. The Martello towers still to be seen on the Kent and Sussex coasts bear witness to the reality of the threat. But the British Fleet under Calder in the Bay of Biscay, and

under Nelson at Trafalgar, had very soon put that matter right.

No! Invasion might be half-heartedly attempted but its success were unthinkable; while as for this faintheart talk of aerial bombardment, the Norman arrow which put out Harold's eye was the first and last instance of the sort in all our written and unwritten history.

This feeling of complacency which undoubtedly existed in the mind of the general mass was soon, however, rudely to be shaken.

II

It was common knowledge that Germany possessed a small airship fleet and those better informed knew also that it was reinforceable by three commercially operated Zeppelins. The name of the inventor was already a household word in both hemispheres and hero worship of the old man by his fellow-citizens had become a cult.

But the days and nights succeeded each other since the outbreak of war and still there was no sign of enemy activity in this direction.

A shiver went through the country, late in August, 1914, when the Zeppelin, Hansa II, bombed Antwerp just before the city fell. When a liner strikes an iceberg each passenger shudders with the ship, and so do most of those when reading an account. Such was the brand of shock which English people felt at the bombing of Antwerp, increased by a lurid Press description of the event in all its ghastliness and by eye-witness accounts from the thronging Belgian refugees.

But time passed, allaying fear of the like happening to us, and still we were left alone. The man in the street was ready,

as ever, to argue himself out of an uncomfortable frame of mind. He agreed with his next-door neighbour that the "Zepps" were too busily occupied elsewhere. There were not so many and they had manifold duties to perform; reconnoitring out at sea; observing the various army fronts; concentrating their main bombing endeavours on troops, on depots, and on Continental towns and cities. Was it likely that, with so much to do, they would risk the hazards of cross-Channel flight against us and our capital?

The citizen in point of fact was truly in a fog. The Censorship had come down on him and clamped the machinery of his accustomed aid to thought. He had only rumour to feed on, an indigestible mass, and not rendered less so by the natural human inclination to take in all that came his way.

Trainload after trainload of bearded Russians, still stamping with the cold of their Northern steppes and wearing snow-flecked sheepskin coats, had been transported from frozen Archangel in the White Sea and were being rushed south from Scottish ports to stiffen the resistance of the Allies. What a man was K. of K.! Who but he could have thought of such a thing? General Smith-Dorrien, sitting at breakfast in his chateau headquarters during the battle of the Aisne reads aloud a letter from his sister, just received, about this very thing. Could it possibly be true, his staff inquire, inclined to doubt? The General slaps his knee in a gusto of appreciation. Of course it was true! Wasn't it just the sort of surprise that Kitchener would spring?

If leaders in high places were as gullible, was it to be expected that ordinary individuals would be less so? Men were fighting in France and others were thinking things out at home. All was well, or would be in the long run.

With large sections of the public in this self-assured frame of

mind, the Commissioner of Metropolitan Police, on 11th September, 1914, issued the first Ordinance for the restriction of lighting, not as a measure of economy but to safeguard London against airship attack. There was glumness and uneasiness and sheaves of rumour began to fly.

Street lights were reduced in number and shaded. Shop-window illumination was greatly diminished and the interiors of public transport vehicles, trams and buses, darkened to the point of semi-obscurity. Blinds had carefully to be drawn before house lights were put on in private dwellings.

From that date Londoners, and soon the rest of the population far and wide, became aware of an overlay to the general war atmosphere as it was affecting them. No longer was it merely a question of bearing up under the strain, of showing calmness at adverse news from the front, of economizing consumption, of supporting the Red Cross fund, and of otherwise shouldering the "stay at home" burden of the war.

The people had now and from henceforth to look also to themselves, to have regard for their own safety. The War had overlapped its boundaries, against all precedent, and was spreading to the home front. An island population after a thousand years of complete immunity might at any moment be invaded in a peculiarly horrifying manner. The non-combatant element of the people, male and female, sick and well, poor and rich, were to be endangered equally with the man-at-arms, with the soldier in the field and, worst of all, not in fighting trim or buoyed by comradeship, nor with the light of battle in their eyes. As sheep to the slaughter they would go, the home a shambles and, on occasion, one grave a common resting-place for all.

This is not to say that the population at large were overcome by the fate which impended over each one individually. The

response was stoical and even magnificent. Panic did occur of the sort which even armies are not free from. There was murmurous demand for more adequate defensive measures. But as these latter improved and as the people became gradually inured, not to their peril, but to the sights and sounds connected with it, they obeyed the orderly instinct which is a component of national character and assisted the situation by all the means in their power.

Pathetically, they were like patients in a hospital ward. They were reliant on the treatment and the medicines and felt certain they would get well if they did what the doctors told them to, refusing to say "die." They were as helpless and as passive.

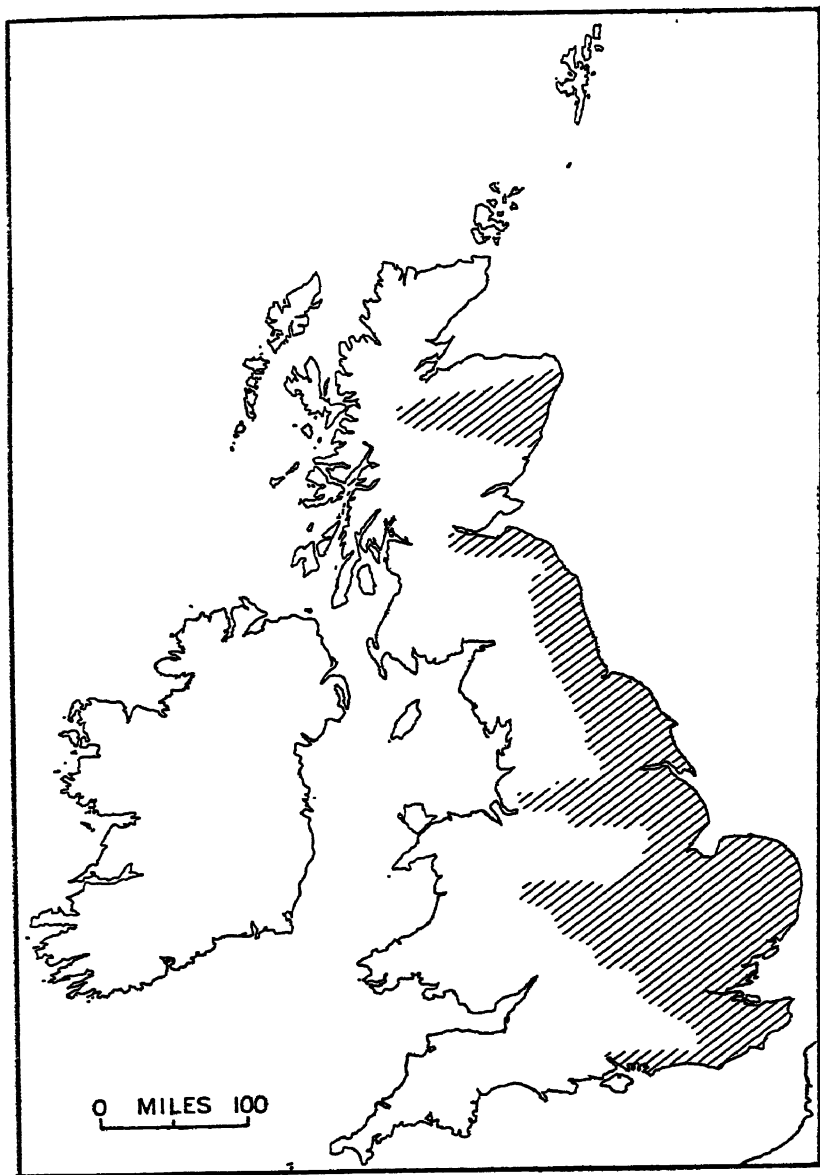
III

Only by an effort of memory, even now, is it possible to recall the London and the England of those nights and days, the tension, the overworked nerves, the horror, the pathos, the heroisms, and the compelling changes in the lives of the people which the air raids brought about.

At night time, in the absence of the bright light diffused overhead by the street illumination to which they were heedlessly accustomed, there was only a dull gleam underfoot. City dwellers, and Londoners in particular, thus became aware that theirs too was a starry sky and that the countryman was by no means better off than they for stellar brilliancy.

For the better part of two whole years, until the airship ceased to raid, the whole country lived and suffered under a Zeppelin psychosis. "Not a Zeppy night to-night, thank God," would one say to another, scanning the sky, as they parted for their homes at the end of the day's work.

THE SHADOW OF THE AIRSHIP RAIDS



MEMORY SKETCH

The moon was then a friend, because the Zeppelins dare not raid on moonlit nights. Later, in the time of the aeroplanes, Gotha and Giant, which assailed the city and surpassed the airships in the death and destruction which they wrought, the moon became an enemy, pro-German. The noisy, droning, winged monsters could only hope for success when the hapless city below was flooded by her rays. The periods of the Hunter's Moon and of the September Harvest Moon, ordinarily associated with a prolongation of worthy toil in husbandry, were especial nights of terror to the teeming masses of the Metropolis.

St. James's Park lake was drained and dried so that the reflection from the water might not indicate the proximity of Buckingham Palace and the Departmental purlicue of Whitehall. Emergency landing-grounds were established in the gardens of the Palace, in Regent's Park and in Kensington Gardens in the case of a forced landing by the pilots who ascended to attack the raiding airships. An anti-aircraft battery was stationed in Hyde Park, in the wide, open space to the east, and a searchlight sent its rays up from the top of the gate at Hyde Park Corner.

The parks themselves, the lungs of the city, splotches of blackness amid the criss-cross in linear and angular confusion of the dimly lamp-lit area which the eye of the raider saw, and therefore a guidance to him of his whereabouts, were given dummy lights so as to render them thus indistinguishable from the main mass of London's human hive.

Everything that ingenuity could conceive was done to baffle the raiders and make them uncertain and puzzled. But the river, alas, Father Thames, could never be disguised, not even though his bridges were unlit and the traffic across them dowsed every light; not even though the shipping, in motion

or alongside, and the motorcraft policing either bank, worked in utter darkness when the warning was received. Father Thames was always a complete "give away."

From the raiders' usual landfall by the Nore where the waters were broad, upstream according to the sinuosities of the bed, until it lay like a curly riband bisecting London from east to west, London's river was a directional sign to the enemy. Even when clouds obscured the land below, the Thames was recognizable, for the cloudbanks, looked down on from the airship, were of thinner texture over the river's neighbourhood and had an uneven, furry appearance as well which betokened water underneath.

Another sight significant of air-raid precaution, soon so familiar as hardly to cause comment, was the array of search-light pencils stabbing the sky as they met at a point, held steady for a moment, wavered hesitatingly as if making up their minds, and then darted off again into space. The volunteer enlistment was being trained in their use, and the beams looked to the raiders like illuminated spiders legs treading the earth.

The roofs of important buildings, such for instance as the War Office, were sandbagged to diminish the explosive effect of bombs. The statue of Charles I in Trafalgar Square, perhaps at the instigation of the Jacobite Society which annually assembles there, and one of London's few with any pretence to artistic merit, was heavily sandbagged, and so were the tombs of the kings and queens in Westminster Abbey.

The face of Big Ben was dark and so were those of other clock dials at a considerable height above ground level. They did not strike the time and church bells did not ring.

As time wore on and raiding became a regular habit, weather permitting, the warning system produced unwonted

sights and sounds in the streets of London and elsewhere in the towns and cities up and down the land. Maroons were let off from the roof parapets of police stations. Constables, afoot, bicycling or in motor-cars, blowing whistles, ringing bells or sounding klaxon horns, with "TAKE COVER" placards round their necks, circulated at full speed through the streets, warning people to make for the nearest refuge. And when the raid was over these same officers would reappear in similar fashion to give the "ALL CLEAR," reinforced by boy scouts and boys of the Church Lads Brigade bugling a call to the same effect.

Tramcars would sway giddily from side to side as they clanged along at top speed away from the assumed danger zone, or to reach the doubtful security of the depot. Motor-buses, and the few private cars about, with bags of coal-gas bellying on the roof, would tear away from the endangered area in the greater freedom of their trackless route. Taxi-drivers, their services at a premium and able to pick and choose, would remember that the male is the more generously inclined animal and behave with notorious discourtesy to beauty in distress.

Everywhere "shelter" notices were to be seen informing the safety-seeker that this or that basement, belonging to police stations, public buildings, large business premises, and even private houses, was available if he were caught abroad when the warning went.

So well disciplined did the populace become in time that busy thoroughfares such as the Strand, or any with an equal amount of wheeled and pedestrian traffic, would be cleared and stilled in the twinkling of an eye as soon as the air-raided warning was given. Vehicles, even horsed carts, would be abandoned by the curb, the drivers would seek a shelter, and a silence like to that preceding dawn, punctuated rather than

broken by the guns of the defence, would settle on the city.

It was a *sauve qui peut* scramble for shelter. There was no mistake about that. The fizzing, high-pitched whine of the bomb arriving from above at incredible speed, though with a sensible approach, seemed to be personally directed at each one who heard it, and the curious, cushioned sound of the resulting explosion, evil as it was, occasioned a sense of relief that the missile had found its mark elsewhere.

IV

The work of the clergy was manful and effective, particularly so in the poor, East End parishes of London. For this was the pity of it,—that the spreading districts eastwards of the City, clearly demarcated by the ribbon of the Thames and consisting of flimsy, basement-less houses, closely built and with a teeming population, lay beneath the skyward approach of the invaders and suffered worst.

Leyton and Leytonstone became bomb-infested neighbourhoods beyond the ordinary. The air routes both of Zeppelins and monster aeroplanes lay over them out of dark Essex and over the ridge of Epping Forest. They were the twin door-steps of London.

In the East End localities the crypts of churches, church institutes, vicarages, towers, sisterhoods, settlements, even stoke-holes, every available form of shelter possessing sound, concrete flooring above, was brought into the service of safety. Dingy walls were cleaned and whitewashed, electric light was introduced and harmoniums were installed to cheer the depression of the long waiting hours. The work became

MEMORY SKETCH

highly organized. In one crypt, for instance, nineteen hundred people could be run into shelter in less than nineteen minutes.

The very old ladies were hard to bring into line. They professed to want to die among their own pots and pans. One of eighty-four years refused to leave home even after the terrifying experience, to use her own words, of "seeing me front door go right past me up the staircase and me standing in the passage." Another, discussing ways of celebrating peace if ever it should come, said that for her part she would have her stockings off again. "They haven't been off for two years," she added.

The foreign folk in the crowded East End district were singularly liable to an unreasoning panic, particularly the preponderating Jewish element. Mostly from Russia, with a minority from Germany, Roumania and the Low Countries, this timorousness was probably the result of harsh treatment and persecution through the ages from every nation under the sun. The Eastern temperament might have also been a contributory cause. But whatever the reason it is an undoubted fact that in the air-raid periods they were far more subject to alarm than the body of the people with whom they dwelt.

In the shelter of the tube stations the distress of Jewish mothers and children was very difficult to soothe. They would scream loudly, tearing their clothes and beating their breasts, while old men amongst them would pluck hair from their beards in the fashion of the Scriptures. Too often, bands of young aliens belonging to neutral or allied countries, shedding every vestige of manhood, would behave like animals of the wild, sometimes brutally trampling people to death in a mad, insensate rush for safety.

Nightly, except when weather conditions obviously pre-

vented raiding, hordes of people would slowly progress towards the tube station nearest to their homes and there take up quarters for the night. They would throng the staircases, passages and platforms, occupying every square inch of available space. As many as a quarter of a million would find accommodation in this manner, the able-bodied accompanied by the sick and the halt. It was a docile crowd for the most part, patiently responding to the efforts of the officials to lessen the confusion. In such circumstances babies were born and those at the last gasp died. Sanitation there was none. Food litter lay around, and worse still, to add to the squalor of the scene. Passengers on the system were sometimes unable either to take train or to alight at their destination, so densely packed was the multitude.

The trains moving westward were in any case fuller than capacity with a human freight informed with the single purpose of reaching a suburban terminus and there camping in the fields till dawn. Groups of people belonging to this super-added local population would behave distractedly, praying for deliverance in camp-meeting style and cursing loudly, with arms extended, the brilliant autumnal moon.

During the latter period of the raids, when the enemy aeroplanes would come and go in ones and twos and threes over a prolonged part of the night, the anti-aircraft batteries were incessantly at work. At first this addition to the hideousness of sound added also to the terror of the populace. All explosive noises which met the ear were attributable to one cause and to one cause only, to the impact of bombs. But later, when the public ear was better trained and the public mind better informed, the noises of the guns brought a message of comfort as proof that the defences were alive and doing all that could be done.

MEMORY SKETCH

Later still, when barrage fire was instituted, throwing up a screen of bursting shells, and the artillery crescendo drowned the noises borne from the air, the resulting drum-fire roar was welcomed as a deliverance even though shell fragments falling back to earth claimed many victims for themselves.

Alas, the guns were never a deliverance though they did undoubtedly deter the less bold amongst the raiding pilots. They became in fact the instruments of self-bombardment, so characterized by Mr. Churchill, and on occasion caused casualties which amounted to a third of the total resulting from the action of the enemy. A Member of Parliament in the House of Commons, referring in a speech to this added danger, calculated that half a million fair-sized pieces of metal rained down thus on London during a prolonged barrage-fire when as many as thirty thousand rounds were fired from the 3-inch guns.

In the lull which preceded the "all clear," the first indication to those within doors that devil's work had been done again was the loud bell-clanging from ambulances and fire-engines racing towards the scenes of death and destruction. Helpers would be already on the spot, Special Constabulary, the Salvation Army, members of various Ambulance Corps, and citizen volunteers whose willing assistance was never lacking. The debris would be searched for victims even while the hose was playing on the flames. Dead and alive, the buried and bombed would finally be unearthed from beneath the ruins of their abodes, the former to the mortuary, the latter to hospital. The dead were often unidentifiable and sometimes so dismembered that the poor remnants were gathered up in wholesale fashion and thus consigned to the grave.

Early the next morning the morbid and the curious, the sight-seeing element of the populace, would assemble where

overnight men had battled with time for the saving of life. They would stand quietly apart and mournfully regard the devastation wrought, scrunching underfoot the broken glass splintered to a powder and treading in the woodwork of rafter and flooring rendered into sawdust. Men would soon arrive to put up hoardings, not only for the preservation of salvaged property, but also, officially instructed, to disguise the desolation from the eyes of wayfarers and thus make lighter of the damage done. If window fronts were shattered and the goods laid bare within, seldom were the occasions on which pillaging took place. Even the criminally minded were ashamed to take advantage of an opportunity thus arisen.

Sometimes a Daimler car would drive up, out of which would step an officer in khaki wearing Field-Marshal's badges of rank accompanied by a lady in black. They would be the King and Queen on an errand round of visits to the bombarded districts for the purpose of offering sympathy to the dispossessed inhabitants of the shattered homes. When the royal car went on its way no cheers would be raised. Instead there would be hand-clapping as more appropriate to the occasion, for humble folk know by instinct the right thing to do.

V

The above sketch, as far as it has gone, refers mostly to the state of things in London during the air raids. The capital of England was always the Mecca of the raiders. To attain it the Zeppelin commanders strove in friendly rivalry, and the pilots of the Gothas and the Giants nightly risked their lives. London was the vital spot, the "solar plexus" of the nation. Never before in all the world's history, except perhaps in

MEMORY SKETCH

the case of Ancient Rome, was a main city so completely the nerve-centre of the country itself, so inseparably linked, and so commandingly directive in the scheme of national affairs. With London brought low, as the German people fondly hoped would be the case, through the agency of their incomparable flying services, England could be made to sue for peace. Who shall say that the judgement was at fault?

The same things, though in lesser measure, were happening over half the rest of the country. The eastern coastal fringe was particularly affected, and especially places such as Hull, Tyneside, Edinburgh and Harwich, important objectives and clearly demarcated by their situation at the head of estuaries. In those places also similar scenes of death and destruction resulted from the raids, and there as well murder of the mind conjointly with murder of the body was committed.

In the provincial hospital wards, likewise, babies were born deaf, deformed and blind owing to the terrorization of expectant mothers. The case of the children was sad indeed and those of tender age suffered cruelly from nerve shock.

Pathetic, for instance, the state of mind of a small boy, the son of a postmaster, who stoutly asserted that he was not frightened but soon found himself unable to button up his clothes. And brave the effort of a poetess, aged seven and a half, who composed hymn lines of her own to cheer her schoolmates in the shelter:

“God is our refuge, don’t be dismayed;
He will protect us all through the raid.
When danger threatens, we never need fear;
He’ll watch over the weakest until the ‘all clear.’”

As many as possible of the worst cases of nerve shock among children were sent under Church organization to

seaside and country resorts in the West of England for a fortnight or more.

A tender recollection of those days is of tiny toddlers, holding brothers and sisters yet younger by the hand, arriving underclad and forlorn at the shelter assigned to their district. Their parents were on night work, munition-making, and the children, risking pneumonia and other infections, were being strictly obedient to the instruction which had been drummed into their heads.

At school the day after a raid the children would be encouraged by their teachers to sleep through the lesson hours so as to restore the nervous strength which the night of terror had dispersed.

On occasion a recollection of the Great Plague could be evoked. This was the sight of men, pulling or pushing anything on wheels, visiting a bombed district from door to door and shouting, not "bring out your dead," but nearly as bad, "anybody killed or injured inside." The doors and shutters belonging to the houses of the afflicted were utilized as stretchers to bear them away.

False alarm, and numerous were the occasions, had as much force as actual attack in the sense of fear awakened. Sometimes the illumination of cloud masses by distant searchlight beams, it may be at practice only, would drive a town's inhabitants underground by night. Munition-workers would "down tools" and seek their homes, not necessarily to return at factory time the next day. Once, in February 1916, when the warning system was in full and efficient working order, a false report of airship activity from Scarborough had the effect of extinguishing lights and stopping work as far afield as Bath and Gloucester.

The planet Venus, riding overhead on a windy autumn night

in a cloudy sky was once mistaken for a Zeppelin by a senior Royal Flying Corps officer who, there and then, ordered the Royal Aircraft Factory at Farnborough to be plunged into darkness.

Outside London, the haunting dread of a raid would cause also a general exodus from the towns to the shelter of mine workings and colliery drifts in the Midlands and North; to the open fields at places like Hull; and to caves, subterranean passages, and disused chalk pits in Kent and elsewhere on the south-eastern coast where such facilities existed. The harassing effect on old and young alike of these nightly migrations is beyond computation.

The normal lighting restrictions enforced by the police, apart altogether from the "blacking out" of munition plants, had their dangers and depressions. In Sheffield, for instance, out of twelve thousand street lamps in normal use all but forty-five were permanently dowsed, and even those few remaining were extinguished at half-past seven when the days were short. Pedestrians could only grope their way home by the light of hand-held electric torches fitfully switched on. Mill-working lasses in the Lancashire cotton factories were in jeopardy going to and from their looms in the gloom, for darkness provides an opportunity for the violater. So completely had the country been scared into compliance with the need for darkness which could be felt that here and there prosecution resulted from striking matches in the open, until it was given out that such strict observance of the letter of the law was unnecessary.

As for car headlights, hapless the plight of the motorist who should have them on when approaching a populated district. Whether civilian or soldier, whether on business or on pleasure bent, it was assumed that he was guiding hostile

airships, and the local "vigilantes," resurrected warriors from retirement, would stop him and demand undoubted proof of his identity before he might proceed. Neither uniform nor staff badges on the collar would convince them, for that was how the spy got through and did his work.

Civilian air-raid victims were accorded the privilege of a military funeral, complete with firing-party for a salvo over the grave, a bugler to blow the "last post," a band to play the "Dead March," and a Union Jack to drape the coffin.

Small boys with the irresponsibility of their kind were to be seen hunting for souvenirs as soon as the "all clear" enabled them to do so and sometimes before that. They would straddle the twisted lengths of tram-lines gouging out bomb bits from the paving with old penknives and squabbling over a good find. They would even play at "air raids," taking cover, imitating vocally the fall of bombs, and taking it in turn to become casualties. Their diversion was listlessly regarded. In a last analysis it seemed to the grown-ups to be proof of a bull-dog spirit and so they let them alone.

Even the very birds and animals developed air-raid nerves. It was for them their war-time malady. Dogs would howl piteously. Cats sought the darkest recesses. In open country cows lowed uneasily and the horses in the fields stampeded up and down. Sheep lamented in the fold. In the coverts and amongst the stubble the birds chattered when they should have slept and noises of alarm came from the pheasant and the partridge. Their alert, animal sense of hearing could detect the hum of engines in the air long before the sound reached the ear of man.

It was a strange England; strange in city and town; and strange over the countryside.

MEMORY SKETCH

VI

And now this preliminary sketch of England under War from the Air must be brought to a conclusion.

People are forgetting those days. It is well they should be reminded. Memory is short.

In actual fact the number of dead and injured throughout the country was not large. It amounted to a mere 1,414 killed, and to no more than 3,416 wounded. Hardly a calculable percentage of the population was thus affected. In the year before the War 2,099 people were killed, and 42,544 injured in the United Kingdom by traffic accidents alone. Annually 1,000 are killed and 150,000 injured in the mining industry.

But such comparison is not to the point. The one is peace time, and the other is occupational risk. The air-raid victims were a sacrifice to war.

The material damage as a result of the raids amounted altogether to just under three million pounds. The cost of the War to us alone latterly was just under seven million pounds for a single day.

That is no way either in which to assess the cost intrinsically.

About 270 tons in deadweight of bombs fell on British soil throughout the War in the course of 103 raids, airship and aeroplane combined. A paltry total, for instance, compared with only a mild artillery preparation on the Western Front. A local hailstorm brings down as much.

In all some 8,500 bombs were let fall small and great, from the light-weight incendiaries to the high-explosives up to a ton weight. The London anti-aircraft batteries alone fired on occasion as many as 40,000 3-inch shells in a single night against the raiders.

It is not by simple calculation and comparison that the real

lesson of those days can be taken to heart. Beside the dead and injured must be put far and wide terrorization of the populace, women and children, sick and old, especially. The ill health of vast numbers must be counted in, and the misery caused. The constant obsession of minds with a dead weight of fear to the exclusion of everything else must be reckoned. And above all it must be remembered that all this happened to people who dwelt at home far from the fighting-fronts. They were powerless to do more than suffer passively the tragedy and the grief. To these the air raids meant in reality the reappearance in a far worse form of the dreadfulness of mediæval warfare, when towns were sacked by the enemy and the inhabitants put to the sword.

The other lesson is this! That to-day as much can be accomplished in a single raid as was brought about on the last occasion in the course of four years of raiding.

The first bomb fell on British soil on Christmas Eve, 1914. The last bomb fell on the night of 5th-6th August, 1918, the date of the fourth anniversary of Britain's entry into the War. In the interval, for three and a half years the visitations recurred.

It was a strange eventful period of time. In some ways it was a time of deep national humiliation.

CHAPTER TWO

DISSERTATION ON AIRSHIPS

I

WHAT is it that makes things fly or float in the air? In the case of the aeroplane the reason is simple and a matter of common knowledge. The aeroplane leaves the ground, and the flying-boat the water, because it is driven by engine power into the eye of the wind until it has attained flying speed. The pilot then, by lifting up the elevator on the tail-plane, can cause it to become airborne and climb. In principle it amounts to holding a kite at a slight angle to the wind until the fellow out in front with the string yells "let go." And an aeroplane, of course, can only stay up as long as it is being driven through the air at a minimum high speed.

In the case of an airship the reason is even simpler. It rises from the ground because its gas-bags are filled with hydrogen or helium, both of which are lighter than air. The analogy of the toy balloon, filled with coal gas and flipped about the room, is the principle in miniature working order.

Yet it is a far cry from a toy balloon to a vessel capable of flight, and flotation in the air, which can assume the huge proportion of the largest ship at sea, not excepting the *Queen Mary* herself, and can take aloft with it a total weight of not less than 200 tons.

The imagination is strained to account for the fact that hydrogen, or helium, can be so much lighter than air as all

that. That they must be so is apparent, because airships of these enormous sizes do fly. And yet the wonder grows.

The answer is that hydrogen, in point of fact, is very much lighter indeed than air, even though the latter itself is 800 times lighter than water. Two hundred cubic feet of air weighs sixteen pounds. Two hundred feet of hydrogen weighs one and a tenth pounds, so that the proportion is not far from sixteen to one.

But even so it is still an amazement that a gigantic airship of metal construction throughout, multi-engined, with fuel to correspond, a crew of thirty or more, water ballast, and with a huge dead weight of armament and bombs in time of war, can lift itself, and all this besides, five miles above the ground and continue there indefinitely. Even thistle-down eventually comes to ground.

To grasp the fact, as well as know it to be true, it is necessary to regard the air as a fluid just the same as water. A ship displaces a volume of water exactly equal to its own volume and floats. An airship displaces a volume of air exactly equal to its own volume and flies.

Here is a further illustrative step. Take an empty gas-bag weighing thirty pounds, say, and capable of containing 1,000 cubic feet of air or hydrogen. Air weighs 16 pounds per 200 cubic feet, so that if filled with air the bag will be increased in weight by 80 pounds. But the equal volume of outside air displaced will weigh also 80 pounds. If, therefore, it were suspended it would quickly fall, because it is heavier now by 30 pounds than the air displaced.

Now take the same gas-bag and inflate it with hydrogen. Its weight will now only be increased by $5\frac{1}{2}$ pounds, because hydrogen weighs one and a tenth pounds per 200 cubic feet. But the volume of outside air displaced continues to weigh

80 pounds, and the gas-bag will rise because it is now $44\frac{1}{2}$ pounds lighter than its displacement. It will continue to rise, moreover, until the attenuation of the atmosphere at higher altitudes, and its consequent reduction in weight, causes the volume of air displaced to equal the weight of the gas-bag.

The whole principle of airship flight is contained in the above simple, though little understood, calculation. Increase the size of the gas-bags, multiply their number to any extent compatible with progress in light metal girder construction, and the answer is a super-Zeppelin such as the *Hindenburg* of to-day.

A thousand cubic feet of hydrogen has a lifting power of 70 pounds, and 35,000 cubic feet can take up a ton. The cubic capacity of the *Hindenburg* is 6,750,000 cubic feet of gas, housed in sixteen cells. In this way it is given a permissible flying weight of 200 tons, exceeding the weight of 3,000 people standing in a mass, or that of four regiments on parade.

II

At the commencement of the War the units of the German airship fleet approached the bulk of a sea-going vessel of 20,000 tons gross. Throughout the War their size continually and progressively increased. Greater invulnerability was constantly striven for as the aeroplane threat against them grew, so that the speed went up and so did the ceiling height at which they could fly. The Zeppelins delivered to the Allies under the terms of the Armistice were much more than twice as big in the above comparison.

We must pay tribute to the marvel of the achievement, even if the unworthy use to which it was put, by renewing barbarism in war, can still offend us. Germany fashioned 112 of the rigid

monsters from first to last during the actual course of hostilities. And she did so while we, at the same time, were hard put to it to keep abreast of her aeroplane developments over the Western Front and elsewhere. Our enemy was indeed purposeful. With such furious war-making frenzy it can be understood how even to-day her people refuse to admit that they suffered a military defeat. It was the revolutionary stab in the back, they maintain, which brought an end to the War and not Allied success.

It should be noted as well that, from the above total, no less than a hundred became a loss. They were destroyed by ground and air attack, by weather mischance, by reason of inexpert handling, and many were deleted on account of obsolescence. It is claimed that none were structurally deficient. Undeterred by this enormous percentage of casualties Germany was building hard when her military power collapsed in the late autumn of 1918.

As an instance of the prodigious resolve with which the foe waged war, there is the episode of the voyage of the L. 59. The history of this remarkable flight is outside the scope of this book. It does, however, serve to bring home to the mind the excess of energy in airship construction and thus partially account for the persistence with which they raided over England even when it was clear to the High Command that the purely military gain was meagre.

This huge Zeppelin, a fifth larger than any of its predecessors, was commissioned at Staaken, near Berlin, in November 1917. The L. 59 was not to be dedicated to raiding, nor was she to be put to reconnaissance work with the High Seas Fleet in the North Sea. Her specific purpose was to bring relief to Lettow-Vorbeck in East Africa, whose columns were reported to be short of everything and living on the land.

As big in cubic measurement as the Canadian Pacific liner *Empress of Britain*, the L .59 took flight from Yamboli in Southern Bulgaria, in order by that much to curtail the voyage. She carried up with her a load of fifty-five tons, made up of a crew of thirty, water ballast and fuel, ammunition, rifles, spare clothing, provisions, jungle knives, radio parts, and sixty hundredweight of assorted medicines.

All went well and she arrived on schedule time over Khartoum, more than two thousand miles from her point of departure. She was proceeding in the full hope of fulfilling her romantic and spectacular commission when she was recalled by wireless orders from Berlin. The reason for the recall is interesting.

Berlin had intercepted a British wireless message from East Africa to the effect that the last stronghold of Lettow-Vorbeck had been captured. Believing in the truth of the report and realizing that in that event the airship could no longer help matters, the message of recall was given. As a matter of fact the information was wholly incorrect, and Lettow-Vorbeck was still at large when the Armistice came.

It is recorded that while the Commander of the L .59, Kapitanleutnant Bockholt, instinctively obedient to orders from above, did not hesitate to "about ship," his subordinates on board demurred, pleading with him to proceed if only for the moral effect of their appearance so far afield.

The L .59 landed safely at Yamboli after completing ninety-five hours in the air. She flew in all 4,230 miles, a distance as great as from Berlin to Chicago, and her tanks still contained enough fuel for a further sixty-four hours' flight. It was an epic performance, nearly twenty years ago.

III

And now, before the chronicle begins, it will be well to furnish some description of a raiding airship. Not as seen from below, looming malignantly overhead, a thing of dreadful consequence to the beholder, or caught in the search-light beam with its underside a fish-belly white, but from much closer to; from the point of view, in fact, of those on board. As weapons of war it seems certain that airships will no longer play a part, their powers of offence having been scotched by the aeroplane. But a fuller interest will be imparted to the story of the raids by a knowledge of the interior working of a raiding airship.

It is, say, early afternoon on a day in November in the year 1916. At Nordholz, five miles west of Cuxhaven, at the mouth of the Elbe, the great Zeppelin shed is slowly rotating, like a locomotive turntable, so that the opening faces exactly into the wind. By means of expert man-handling the airship gradually emerges, nose first. She is fully gassed-up with fresh hydrogen since her last trip. It is a routine procedure, taking from the generating plants as much as six million cubic feet daily for the whole airship fleet.

The crew get aboard. The "cast-off" is given and the Zeppelin rises vertically, her engines ticking over and instantly responsive to orders from the control car. She is now on her way to keep *rendezvous* over Heligoland with her consorts, sometimes making ten in all, who are conjoined in the enterprise of raiding London, or the Midlands, in the late night hours.

Slowly cruising on a south-easterly course, so as to consume the remaining hours of daylight, our Nordholz airship stealthily shortens the distance to her landfall. The night is not

starlit enough for astronomical observation and so she avails herself of the one sure navigational aid that exists before committing herself to the darkness ahead.

This sure aid consists of two lighthouses in Flanders, one at Ostend and the other near Steenbrugge, fifteen miles inland from the coast. They throw vertical beams, and they are stationary. A line joining the beams, and projected westward, points directly to the mouth of the Thames. After that there is no further guidance, and even so the varying strengths and directions of the winds which blow at high altitudes make the exactitude of the landfall aimed at a matter of chance.

To send back radio signals asking for position would be to "give away" the impending attack, and put the defences, especially the night-flying aeroplanes, so dreaded since their last success, on the alert before discovery became inevitable.

The ever-present difficulties which confronted the airship raiders should be understood. Changes in the weather in our latitudes come from the west, the general direction also of the raiders on their way across. They were thus deprived of weather forecasts. The most westerly meteorological stations which they had the use of were less than a hundred miles from German General Headquarters in Belgium. Always they were forced to set out weather-blind, sometimes on a twenty hours' flight. A storm might arise, twist and turn, or pass over, before any warning could be issued to airships in flight. Even moderate winds, backing or veering unexpectedly, could mar success. Rain, fog and thick cloud would make the outer envelope heavy and weigh the airship down.

Such conditions, with a darkened land below, made path-finding in the sky a matter very often of supreme difficulty. Over and over again places in England were bombed in mistake for others situated as much as fifty miles away. Quite

often bombs would fall harmlessly on a burning slag-heap or heather alight, released under the impression that an industrial area was being attacked. Our English fogs and the moistness of our atmosphere, which we so decry, played friend in those days. They saved us from much harm, just as, in our early history, the sea-rovers from Scandinavia and the Baltic were baffled by them. In its misty mood we were protectingly enfolded by our climate, but to the raiders it bore an ugly and a sinister aspect.

Another disadvantage of the enemy's geographical position in relation to our own was that our wireless-intercepting stations were much better placed than theirs, with broader angles for triangulation. In consequence whenever the Zeppelins did appeal for cross-bearings to fix position we could pick up the replies and locate them much better than they could locate themselves. In this way it was often possible to deduce the part of England for which they were heading.

But to return to our Nordholz raider. The gondola arrangement is as follows. There is one forward and another aft, containing each one or more Maybach engines of 240 h.p. From the foremost the airship is piloted and commanded. Amidships there is a gondola on either side, and in each an engine.

On the outer envelope, at the very summit, is a machine-gunner's nest for look-out and defence. He communicates with the control cabin by speaking-tube, and he is shielded against the fury of the wind which would otherwise make him numb and helpless.

Close up against the belly is an interesting device. In this case it is made of wickerwork and shaped like a covered-in canoe. It is an observation car and can be lowered beneath the clouds while the airship rides above, so that the occupant

can direct movement or time the fall of bombs. It has a comfortable seating-space, a chart table on the bed-tray principle, a compass, a shaded electric light, and a telephone. When the cable of suspension is completely unwound the car hangs down three thousand feet below like a spider at the end of a web-strand. The cable is lightning-protected, of quarter-inch steel, and the core of it is insulated brass serving as a telephone connexion.

Incidentally it is inscrutable why this device was not more widely used. It might have rendered the problem of defence almost insoluble, used as a navigational aid alone.

Our airship makes her landfall. She carries a weight in assorted bombs of about a ton and a quarter, from the smaller incendiaries to the high-explosives up to 660 lbs. For active defence she is equipped with machine-guns, but she relies equally on her speed of sixty miles an hour and her ceiling height of 20,000 feet.

On her way over, or while hovering for the right moment to begin, the crew nibble at their rations. There is cold potato, bread and sausage, hard-boiled eggs, chocolate bars, biscuits and crackers. Drinking-water is hung in bags. In the case of one or two of the engines the exhaust pipes are adapted for a hot-plate, and there is another in the control car, the commander's station, for frying eggs and warming up coffee.

The crew on board number twenty-three, each with clear-cut duties to perform.

The commander in the forward gondola is responsible in every detail for the success of the raid. His special study is the Zeppelin map of London, compiled from the data of previous raids and continually entered up. It resembles a chart of the constellations with the inky ribbon of the Thames athwart it like a Milky Way. Each star point on it has

significance, either as a searchlight or a battery position, as a favourable objective for bomb-dropping, or as an area to be avoided.

The observation officer is also in charge of the wireless apparatus, and it is he who operates the bombsights and releases the bombs. The rear gondola contains the Chief Engineer. The steersman obeys the course instructions and checks up on speed and position. Two men are in charge of the elevators and two more in charge of the lateral controls. The duty of these latter is also to discharge water ballast, operate the hand valves and, if need be, to man the machine-guns. Two wireless operators are in attendance on the commander in the control cabin. The sailmaker has the onerous task of climbing about the interior to inspect the gas compartments, to test the valves, and to patch the holes in the envelope after undergoing anti-aircraft fire from the ground. The sailmaker is always on the job. Sometimes ice forms under the valve lid at high altitudes, preventing it from seating properly after use, and if he does not free it a leakage of gas will continue. Finally there are twelve mechanics to keep the engines in tip-top running order and see to the fuel tanks.

They are all either officers or N.C.O.'s, the members of the crew. They will be transferred bodily as a crew in being from one airship to the next. In such a way only can be preserved the delicate co-operative skill so vitally necessary to the right handling of an airship. They must be men of exceptionally sound physique, able to withstand the strain of being boxed up for hours on end in a narrow gondola with the roar of engines constantly in their ears; able to work their brains and brawn in the unaccustomed condition of a rarefied atmosphere; and able to endure below-zero temperatures for long periods on end.

Such is the "close-up" picture of an airship setting out to raid. The world will not see its like again, though that is small subject for congratulation, for the world will see much worse.

The Zeppelins were our tyranny during the War. On their account men showed fear before their fellow-men and were not ashamed. They laid bare our moral bones. Lacking the strength afforded by discipline and training, such as belongs to the fighting man proper, we were liable to confusion and panic. The airship approach was furtive, essentially that of a night animal, and much more unmanning than the full-speed dash of the Gotha and the Giant which tipped and ran. There was black magic in the monosyllable "Zep," and just as mothers would say "Napoleon" to make their children good a century ago, so now did they modernize the threat. The airship could be noisy or silent at will, motionless or swiftly moving. Once seen, or vividly described, their monster bulk, ominously shaped and evil looking, could obsess the mind and endow them with a fabulous power of destruction.

They will not come again. But this can be said,—that as a nation we have undergone a unique experience in the whole history of war. We have been bombarded over the length and breadth of our land by an engine of destruction, now passed away for ever, which was wrought for our ruin and on us was concentrated the full effect. Paris was only twice visited, and then by single airships, the second of which did no damage at all.

The period of the Gothas and the Giants was bad enough, and if the War had been prolonged much worse was already in store. We know, for instance, from Ludendorff's own memoirs that "Elektron" bombs were ready in quantity by the end of September, 1918. These were incendiaries, burning

at a temperature of 3,000 degrees Fahrenheit and quite unextinguishable. They could make steel run like tallow. Girder buildings and concrete floorings were no protection against them. Chemical and bacteriological war from the air, gassing the populace, spreading disease, and poisoning reservoirs, would have been the next steps in order of procedure. But the enemy by then was in sad case. His military downfall was too imminent for such fiendish work to have affected the result of the War. By so doing he merely courted revenge and put himself outside the pale of humanity when peace terms came to be decided. On these grounds the use of "Elektron" was forbidden.

The Gothas and the Giants, moreover, concentrated on London and did not widely advertise themselves. The rest of the country was sorry for Londoners, but theirs was a grief of detachment mixed with a morsel of self-congratulation. The Zeppelin prowled and was mysterious. But there was no mystery about the movement or the mechanism of the aeroplane raiders. They wrought a greater mischief on the whole, but their action was aboveboard and not a sneak thief way of work. It is the Zeppelins which will be talked about a hundred years hence, and not the aeroplanes.

A remarkable and little-known fact is that the aggregate of the airship activities over England amounted to only a tenth of the sum total of energy expended. Fleet patrol work in the North Sea absorbed the huge remainder, and thoroughly justified itself. Airships, for instance, saved von Scheer at Jutland from almost certain disaster.

In spite of the foul weather two Zeppelins ventured out to make dawn observations the morning after the battle. They were able to tell the German Admiral the disposition and situation of our principal fleet groups while Jellicoe knew

nothing of theirs. Von Scheer was thus enabled to escape by the use of these eyes of the fleet, and our subsequent interest in rigid airships, maintained until the R.101 crashed in October, 1930, may well have been due to their success on this occasion.

What might not have been the net result to ourselves if Germany, taking advantage of our total unpreparedness at the first, had concentrated her entire airship energy instead of raiding sporadically? We had luck in that!

Thrice we benefited by large mistakes of this sort committed by the German High Command. Firstly, up to the autumn of 1916, when we were still practically defenceless against airship attack, the raids were so irregularly spaced, with such large gaps in between, that the effect tended to wear off in the intervals. Secondly, when in 1917 our defending aircraft of adequate performance could cope with the super-Zeppelins at the 20,000 feet height at which they flew, it was only the London area which was thus protected. The Midland and Northern industrial districts still lay completely at their mercy, but they quite neglected those weak spots. Thirdly, the moonlight Gotha campaign would have been much better delayed six months so as to synchronize with the March 1918 offensive which all but won the War for the Central Powers. The moral effect of aeroplane raids on London at such a time might conceivably have tipped the scale against the Allies.

But the lesson we received was sharp.

CHAPTER THREE

CHRONICLE OF THE RAIDS: FIRST PERIOD

I

ALTOGETHER there were 103 raids, airship and aeroplane in almost equal proportion. The first was a very minor affair and caused no damage. On Christmas Day, 1914, an enemy seaplane flew up the estuary of the Thames as far as Erith, having previously dropped two explosive messages of peace and goodwill on Cliffe in Kent. The visit may have disturbed digestion but it did not interrupt the feasting.

The last, occurring on the night 5th-6th August, 1918, the fourth anniversary of our entry into the War, was also an abortive affair. The L. 70, the very latest in super-Zeppelin construction, set out to raid with four airship consorts. She was commanded by the renowned Fregattenkapitan Strasser, the head and the inspiration of the Naval Airship Service, and a man also of humane tendency who only attacked strictly military objectives. He was successfully engaged by one of our defending pilots and fell, a blazing mass, into the sea off Wells on the Norfolk coast. The consorts, witnesses of the appalling spectacle, sped for home.

Such were the first and last attempts by the enemy to carry the War to our home front, in each case fruitless endeavours. But in the long, dragging period between the two, when the inhabitants of city, town and country lay under the shadow

CHRONICLE OF THE RAIDS, FIRST PERIOD

of death from the skies, they reached many high peaks of success.

It is not easy to form a comprehensive picture in the mind of this particular phase of the War. There is not even a great deal of literature dealing with the subject. The most authoritative account, embodied in the *Official History of the War*, is food more for the serious student of those times than for the section of the public which reads for interest or general information. In truth, the bald narrative is apt to confuse the mind if it does not dull the senses. It is a huge meal to digest and requires very careful cutting up. Every raid was different and every raid was similar. Charts, showing in detail the sky-paths of the raiders, resembling isobars on a weather map and as hard to follow, suffice for detailed study but tire the eye. The wood is obscured by the trees and in his eagerness to penetrate to the heart of it the reader finds himself bewildered in a thicket. A new presentment is desirable and such is here attempted.

Five simple diagrams accompany this chronicle of the raids, and the first is designed to afford a perspective view of the entire sequence. Indicated by lines of varying length according to the importance of their success, the raids are shown against a time column which embraces the whole period. Black denotes the airship, and "dotted" the aeroplane invasions. The line lengths, from almost a dot to a large portion of the breadth of the confining limit, are determined by various considerations, such as the resulting casualties, the material destruction wrought, the size of the effort involved, and the extent of country flown over.

In this respect the comparison of one raid with another may have produced arbitrary results. With so much reckoning in the account it could hardly be otherwise. But the diagram is

for the sole purpose of "form at a glance," and this condition it does with sufficient accuracy fulfil. The four succeeding diagrams, emanating from the first, are self-explanatory and do aim at accuracy in the detail of casualties.

A brief examination of the first diagram discloses an interesting fact. At first glance, a general frequency of raiding will be apparent throughout the whole period of the War, from beginning to end. The sequences are certainly intermittent, and this is partly due to weather conditions, repair necessities, the prior claim of the High Seas Fleet on airship service, and to the time occupied in training an ever-increasing personnel. But on the whole there is a general level of performance. Once the enemy got, so to speak, into his stride the raids continued.

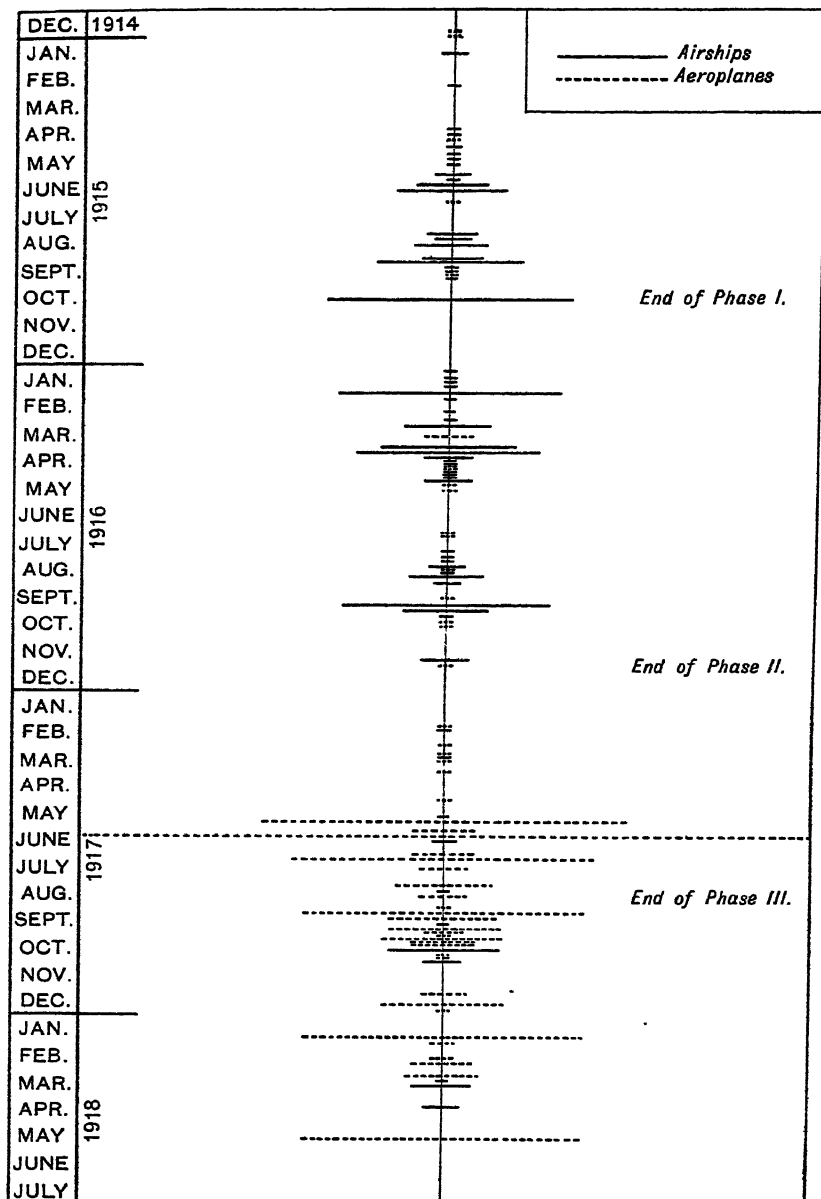
On second glance, however, and after further cursory study the diagram reveals something else beside. There are two largish empty spaces on it, and one sudden increase of frequency. The explanation is as follows.

The two emptinesses occur during the winters of 1915-16 and 1916-17. They are partly seasonal of course, but they are much more than that. Together with the suddenly increased frequency in the autumn of 1917 they are tremendously significant. In effect, the two gaps and the sudden increase tell the whole story in brief, each thus divided phase representing a separate form of attack finally overtaken by the defence, necessitating a pause and a resort to new tactics.

Phase I, for example, depicts the period of the earlier Zeppelin types, slow and with a low ceiling. By the autumn of 1915 better anti-aircraft guns and searchlights, together with an increased efficiency on the part of the men manning them and, also, their provision in greater quantity, render a continuance of raiding too dangerous.

Phase II commences three and a half months later with air-

THE SEQUENCE OF THE RAIDS



CHRONICLE OF THE RAIDS, FIRST PERIOD

ships of greater performance and ends in the late autumn of 1916 with the complete mastery of our night-flying aeroplanes. As a serious menace the day of the Zeppelin is over.

Phase III inaugurates the period of the giant aeroplanes flying by day and ends suddenly, after three months of trial, with the enemy's realization that the defence is now too strong.

Phase IV represents a lightning switch over to raiding by night as the only possible alternative, and peters out in the summer of 1918 for reasons partly to do with ill success, and partly to do with the situation in France where the services of the Gothas and the Giants are in greater request.

The end of each phase is thus a dividing line between effort and frustration, between successful defence and foiled attack. On the one hand is the enemy applying all his inventiveness to surmount the ever-increasing obstacles to a full success. On the other hand are we, assisted by our combative instinct and the brave efficiency of our pilots, always behindhand at the first but always slowly overtaking to emerge triumphant. We were, in fact, being true to type and asserting the talent we undoubtedly possess for worrying through.

Casting a final glance at the perspective diagram it is interesting to note how the predominance of black lines in the first two periods gives place suddenly to "dotted." It is the supersession, about half-way in the War, of the airship by the aeroplane for raiding purposes. Dotted lines appear in the first half, just as black does in the second. But in either case they are foreign to the general colour scheme and the form of air offensive which they represent in their minority was on the whole mild and purposeless.

II

The events of the first phase will now be chronicled, and, to begin with, aeroplane and seaplane activity during it will be briefly mentioned and hastily dismissed. It was the day of the Zeppelin and to dwell on this altogether minor enterprise would be to distort the story.

There were six of these cheeky visitations. They were "tip and run" affairs with mostly a bravado impulse behind them. Places like Dover and Margate were touched, and other coastal points in Kent, Suffolk and Essex. On one occasion Faversham was reached, and on another Braintree. Only once were casualties caused, when, in September 1915, a seaplane dropped six light bombs on Cliftonville, killing two women and injuring six individuals besides.

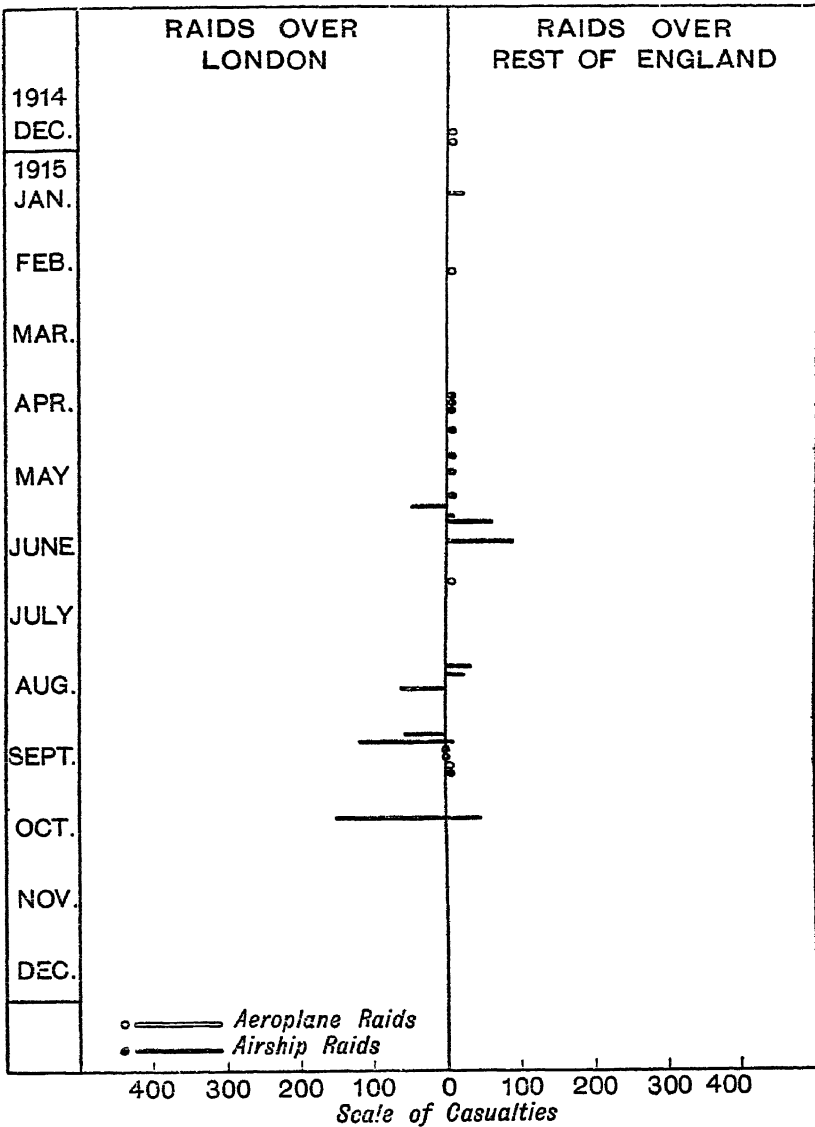
They were gnat-bites, rather than the bruising blows to which the airship visits may be likened, and as difficult to prevent. Our defence organization, built up by rule of thumb as we went along, was solely directed against Zeppelin attack, and the solitary aeroplane invader could always arrive unannounced out of the mist at sea to pay a flying visit and be gone.

And now to chronicle the Zeppelin invasions, the raids proper.

Prior to the first of the series, over Norfolk in the third week of January 1915, a little had been done towards defence but not very much. The responsibility belonged to the Admiralty. Any anti-aircraft guns available were distributed to points purely of military importance, such as the chief magazines and some of the naval ports. The claim of the civilian populace to special protection was ruled out of court.

For London itself, three pair of searchlights and a few guns encircled the St. James's Park area, which was considered a

THE FIRST PERIOD



vital spot, and some naval aeroplanes were stationed at Hendon for daylight patrolling.

Following a City deputation, headed by the Lord Mayor, the system was extended to include the business part of London, but the country at large, and the rest of the capital, remained to all intents and purposes undefended.

As further guns and searchlights became available, these were stationed wider afield until there actually did exist a thin distribution eastwards, north and south, including places of special importance, militarily and industrially, such as Rosyth, Invergordon, the Tyne and the Humber.

The Admiralty, however, had no men to spare for the manning of the extra equipment. The London guns and lights, as it was, were served by civilian volunteers, signed on for day or night duty, whichever they liked, largely consisting of employees of the Office of Works who were constructing the platforms.

As a result of the shorthandedness the War Office, with men and to spare, took over the job outside the London area and thus assumed responsibility for the defences of the country at large. But the War Office could then spare no aeroplanes and, accordingly, the Admiralty held on to that form of defence, allotting aircraft as available, in threes and fours, up and down the east coast of England from Dungeness to Newcastle-on-Tyne.

From such a muddled beginning sprang the huge and efficient, though costly, organization which later, under single control and with almost *carte blanche* freedom in the matter of supply, took the heart out of the enemy's successive forms of attack and was equally prepared for the next move on the board when the curtain rang down.

Early in the New Year occurred the first airship raid over

England. Two Zeppelins crossed over the Norfolk coast on the night 19th-20th January, 1915, bombing King's Lynn and Yarmouth, a few inland villages, and inflicting twenty casualties. The places were utterly undefended and thus early in the day was the illusion dispelled that the raiders would observe convention, selecting only targets for their bombs of military importance. They had shown themselves, and continued to do so, as killers.

As may be supposed, this first experience of terror from the air by night created intense horror in the part affected, though the Press Censorship saw to it that the rest of the country was kept in ignorance.

In point of fact this preliminary raid was in reality a blessing effectively disguised. The German airship service went off at half-cock, so to speak, for there were not enough Zeppelins as yet to sustain the effort. Meanwhile, they had given away their hand and stimulated the defence organization.

More than three months elapsed before the undertaking was renewed, and in the interim our anti-aircraft measures improved by leaps and bounds. A warning system was set up. The lighting restrictions were extended and further systematized. Mobile anti-aircraft gun sections, with their complement of searchlights, were organized, and the naval aeroplanes allotted to the East Coast stations were ordered to be kept in a state of constant readiness.

In mid-April of 1915 the raiding recommenced, continuing at a high rate of frequency until the middle of June when a two months' respite occurred. The long hours of daylight were responsible for this second Zeppelin holiday, for danger of interception by Allied aircraft in France and Flanders during the return journey then existed.

There was good and sufficient reason for the precaution. Two army Zeppelins, the L.Z. 37 and the L.Z. 38, were

destroyed in this way early in June, the former by Flight Sub-Lieutenant Warneford while in flight, and the latter by naval pilots from Dunkirk soon after being housed in her shed at Evere in Belgium.

On recommencement Tyneside was first visited and then, in succession, Essex and East Suffolk, Ipswich, Southend, Ramsgate, Kent, East London, the East Riding of Yorkshire, Hull, and again Northumberland. These raids were not conducted on any considerable scale. The airships came over in ones and twos, mostly the former, and, with three outstanding exceptions, the damage done was slight. The exceptions were the raids on Hull, East London, and the second attack on the Tyne area.

In the case of Hull, the town had no anti-aircraft protection of any sort, and lay at the mercy of the enemy overhead. Twenty-four people were killed and forty injured.

Tyneside, on account of its industrial importance for munition making, did possess a measure of protection in the shape of guns, searchlights and aeroplanes. Owing, however, to the fact that the new telephone warning system was not at the time in full working order, many of the busy plants were on night shift with their lights on when the raider came. Palmer's Works at Jarrow suffered worst, the killed in this one place numbering 18, and the injured 72. The heavy glass roof-lights were blown in and the jagged fragments, falling from above, accounted for as many victims as the bombs.

The East London raid was in a category apart. It was conducted by a single army Zeppelin, and the German Army thus won the prize, zestfully contended for in friendly rivalry with the sister service, for reaching London first. She was the L.Z. 38, to be destroyed in her shed at Evere a week later, and she flew so high over the East End that she had dropped her

bombs and slipped off to sea again before the guns of the defence could be brought into action. Seven people were killed and 35 injured in this first essay on London.

During this series of raids, from Easter to midsummer 1915, our naval pilots did not stint to fly in search of the invaders. With the most distinguished gallantry, unpractised in night flying, they ascended in all weathers in the forlorn hope of engaging an airship and destroying it by bomb or machine-gun fire. But the machines they flew were ill adapted for such service, and the armament they carried was inadequate. Unless bathed, moreover, in the white light of a searchlight beam it were almost impossible to locate the enemy from the cockpit of an aeroplane. The bursting of bombs on the ground could indicate and circumscribe a likely area of search, but even so the airship was capable of nearly equivalent speed and had a higher ceiling.

Searchlights, without the co-operation of which the pilots flew fruitlessly, were still few and far between, and their known locations were carefully evaded by the raiders. At this stage night-flying was nothing more than a gallant waste of effort. It was realized that a plentiful searchlight equipment must be supplied before results could be looked for. The time of the aeroplane was not yet.

A distressing accompaniment to night-flying was the number of accidents attendant on landing. On numerous occasions, pilots and observers were killed or injured, and damage beyond hope of repair was often done to aeroplane and engine, precious also in their degree at that time of scarcity.

As soon as the nights got longer the respite since the middle of June came to an end. From early August to mid-October the raids persisted, sometimes with intervals between, sometimes on successive nights. London was now to be the main

objective. Improved airship types had issued from the factories during the rest period and England's capital was now within easy flight range. The Kaiser's permission had also been obtained in the interim for attack against the City provided that wanton damage were not done to its architectural treasures.

The initial attempt, occurring on the night 9th-10th August, was a failure. Sea-mist, rain squalls and fog over land, and the resulting bad visibility, foiled the efforts of the navigators, causing them to jump to the most mistaken conclusions. Goole, for instance, was bombed under the impression that it was Hull, and Lowestoft under the impression that it was Harwich. Four Zeppelins took part in the raid and they killed between them, almost entirely at those two places, 17, injuring a further 21. Nineteen defending aircraft ascended to attack, one of which pursued an airship out to sea. Slowly, though surely, the aeroplane as a main means of defence was coming into its own.

For our anti-aircraft gunners it was veritably a night of triumph. Naval 6-pounders burst salvo after salvo so close below the forward car of the L. 11 that her commander, Oberleutnant Buttler, hastily jettisoned his bomb load into the sea and made off home. But it was the gunners of the Dover defences who scored the first palpable hit. A 3-inch shell staggered the L. 12 in her flight. She immediately dropped ballast and sprang upwards out of sight. But she was losing gas fast and came down on the water off Zeebrugge. Towed into Ostend, she was there bombed by naval pilots from Dunkirk. In the end she had to be dismantled, her loss being directly due to the Home Defences. It was a sharp and salutary reminder to the enemy that our defences could improve as well as their airship types.

The next attempt on London, two nights later, was also a

failure, though owing, on this occasion, more to bad luck than bad management. Engine trouble turned three out of the four raiders back, and the last of the bunch, meeting strong head winds, decided that it were impracticable to reach London. As an alternative bombs were dropped on Harwich and in the vicinity of Ipswich. Having thus killed 7 and injured 23, the airship went out via Orford Ness.

The third attempt, five nights later, was attended with a mild success. Alone, out of four Zeppelins which set out, the L. 10 reached London, her commander, Wenke, thus gaining the laurels for being the first naval pilot to do so. He flew over the south end of Epping Forest and occasioned 57 casualties in the crowded Leyton district at his untroubled leisure. At the same time he might not have left unharmed. A Chelmsford aeroplane, one of four which rose to the attack, sighted the L. 10, though it unfortunately lost her again. But the significance of the aeroplane was growing.

Incited to emulation by this naval airship success, which had dulled the lustre of their own bay leaves, the military Zeppelins now again took a hand in the game. On the night 7th-8th September, three came in and two of them, one being an all-wood Schutte-Lanz such as was later destroyed by Leefe Robinson at Cuffley, attained their objective. The Zeppelin, attracted by the appearance from above of Cheshunt, an area of glass-house cultivation, dropped almost her entire load in that vicinity to no effect. But the Schutte-Lanz reaped a rich reward.

Entering London via Leytonstone, that stepping-stone to the heart of London so well marked by Epping Forest and the line of reservoirs to the west, she bombed the districts south of the Thames from Southwark Park to Shooter's Hill, killing 18 and injuring 38.

CHRONICLE OF THE RAIDS, FIRST PERIOD

It was a period of new moon and the success of the rival service determined the naval airship pilots that they would not be thus outdone. Accordingly, they came over the night following and one of them did more damage in the City than it suffered on any subsequent occasion. It was the L. 13, commanded by that notorious raider Kapitänleutnant Heinrich Mathy. With devilish deliberation, as if he were sowing the soil, he dropped bombs all the way from Euston to Liverpool Street. He killed and injured 109 people and burnt out whole blocks of business premises with incendiaries. Mathy's raid was significant for another reason as well.

London was this time on the alert and all twenty-six of the anti-aircraft guns of the defence opened up as the invader came within range. The L. 13 was obliged to climb from 9,000 feet, at which height she was seriously endangered, to her ceiling before she was out of harm's way. Our state of readiness, and the efficiency with which the guns were handled, took Mathy by surprise and he so reported on his return, adding that future raids on London must be quick affairs and that the selection of particular targets was now out of the question.

The main reason for our preparedness on this and future occasions, as related in the *Official History of the War*, is of great interest. It was the practice for the raiders, when setting out, to wireless back to their base headquarters the signal "ONLY H.M.V. ON BOARD," a message which we were invariably able to intercept. It had a deep significance and conveyed to us the import that a raid on England was actually under way. This was the reason.

H.M.V. was short for "HANDELSCHIFFSVERKEHRSBUCH," the name of a signal code-book which alone airships were permitted to carry when raiding. To have the more secret naval signal book on board would have been to risk compromising

their code in case of mishap. They were therefore required to report by wireless accordingly and the above routine signal was to that effect.

An example of the Teutonic sense of humour was picked up subsequent to Mathy's raid. It was a well-scraped ham-bone with the German tricolour painted on the shank. On one side was the head of an individual about to be bombed, labelled "Edwart Grey," with the inscription "What am I, poor devil, to do?" On the other side was written "A souvenir from famished Germany."

The immediate effect of the long list of casualties and material damage which Mathy had occasioned was a public outcry for better defences still. The Admiralty, who were still in responsible control, appointed Sir Percy Scott to centralize the system and take sole charge. Sir Percy was of the opinion, prophetically, that night-flying aeroplanes, manned by pilots specially trained for such hazardous work, were the worst enemy of the Zeppelin. Before, however, he was allowed to act on this shrewd assumption it was considered desirable to see what our French neighbours were doing to defend Paris. The Paris defences, it was found, consisted of guns, searchlights and a drastic dimming of lights, with aeroplanes playing only a very minor role. Sir Percy's project was therefore shelved in favour of an increase of ground armament.

This decision, in all probability, postponed for a full year the first moment of real triumph when Lieutenant Leefe Robinson brought down the S.L. 11 in flames, causing thereby many children who were born on the night 2nd-3rd September, 1916, to be christened Cuffley after the place where she fell.

But ere that the War Office had shouldered the entire responsibility and even at the time of Sir Percy's appointment the transfer was under consideration. Meanwhile he got on

CHRONICLE OF THE RAIDS, FIRST PERIOD

with the job in accordance with the official decision, and when the War Office did take over five months later, in February, 1916, London had 65 guns with searchlights to correspond, including mobile sections of both. The home of the Grand Duke Michael at Hampstead became H.M.S. *Kenwood* as the headquarters of one of the mobile sections under Colonel Rawlinson.

In his book, Colonel Rawlinson gives a vivid description of driving a heavy, motor-mounted gun down Oxford Street by night at nearly sixty miles an hour, the people flattening their bodies against shop windows, much more concerned to save themselves from this fury than to shelter from the bombs.

The next three attempts on London, commencing two nights after Mathy's South London success and continuing for three nights in succession, were complete failures. The first two efforts were by the Army Airship Service, unwilling to sit down and let the Navy wipe their eye. Fog over the Epping Forest district foiled the one, and thick ground mist in East Anglia frustrated the other.

Three Naval Zeppelins set out on the third occasion, but squally weather off the Suffolk coast forced two of them to turn back, Mathy alone, in his L. 13, continuing. He also was obliged to relinquish the idea, though his discomfiture was not brought about by the weather conditions. A shell from the Eastern Mobile Anti-Aircraft Gun Section on Levington Heath, south-east of Ipswich, punctured two of his gas bags, fractured a petrol lead, and put him out of action as far as raiding was concerned on that occasion.

The final raid of the series under review, and also the last in 1915, occurred exactly a month later, 13th-14th October. It was remarkable in every way, and a slightly extended account will be given of this the close of Phase I.

It scored more hits, in the sense of a higher death-roll, than any raid preceding and it can be accounted a complete success from the enemy point of view. But from it we also derived valuable lessons. It inaugurated the era of night flying in specific co-operation with searchlights, assisted by the reports of trained ground observers. We had anticipated it. Observer cordons were ringed from the coast to the outskirts of London. Royal Flying Corps detachments were in readiness at three specially provided aerodromes. An arc of mobile 13-pounder anti-aircraft guns had been stationed to the north and north-east of the Metropolis to attack the raiders on their favourite paths of approach.

Five of them came, including the famous Mathy in his L. 13, whose name and number were by now household words. One left the ranks intimidated apparently by machine-gun fire to the south of Cromer, and then there were four. Mathy circled London from the north via Watford, Staines, Guildford and Redhill. He then flew on to Woolwich, bombing the arsenal and barracks, and injuring 13 men.

Of the remaining three, one attacked Hertford, having mistaken the Lea for the Thames, and inflicted 24 casualties. A second proceeded on to Shorncliffe, killing and wounding 26 soldiers in Otterpool Camp, and then, making a wide sweep, reappeared over Croydon to kill and injure 24 people there, mainly occupants of villa residences.

Thus are four accounted for. The fifth, the L. 15, made London and commenced to bomb near Charing Cross. In effect it was a theatreland raid. Casualties were caused in front of the Lyceum, the Strand, the Aldwych, and other theatres. Altogether the L. 15 killed 28 people and injured 70, and the total losses for the raid amounted to 199.

The L. 15, it is true, hit London fairly and squarely, and

great devastation followed the fall of her bombs. But her own experiences were vivid enough in proof of the activity of the defence, and this is what Breithaupt, her commander, had to say about it, and of the general improvement all round.

"The L. 15 was caught in the beams of a large number of searchlights, the illumination, especially over the City, being as bright as day. Unusually violent anti-aircraft fire was opened and the airship was soon surrounded by bursting shrapnel."

Breithaupt concludes his historic report as follows:

"Even more sinister was the appearance of another danger in addition to the anti-aircraft guns. Four aeroplanes, at first observed by the flames from their own exhausts, and then clearly shown up in the beams of the searchlights, endeavoured to reach the airship and shoot her down with incendiary ammunition. . . . not until the L. 15 had dropped all her ballast was she out of reach of this enemy."

Here is a true note of alarm, and what had occasioned it was this. Forewarned by the observer cordons, who were in close telephonic communication with Home Defence Headquarters, the pilots of the Royal Flying Corps had left the ground and were up at 8,000 feet when the Zeppelins arrived. They had no luck. But their efforts had established the necessity for more and more searchlights to enable them to locate the enemy in the sky. The need was for converging rays to juggle with the airship, handing it from beam to beam. Only then, it was realized, could the aeroplane hope to attain a position favourable for attack.

More searchlights were accordingly provided, first an outer ring complete and then an inner. Nine electric tramcars in addition were adapted for carrying lights, and were distributed on the tramway system to the best advantage. Finally, so as

not to leave a stone unturned, two paddle steamers equipped to carry racing seaplanes on the model of the Schneider Cup contestants, were stationed off the Norfolk coast to meet the raiders on their way over or to intercept them on their way back. At last we seemed to be getting to grips with the problem.

Thus, under the stress of continual attack, did our defences grow. The London area was already rendered too hot, made so by the sinister apparitions described by Breithaupt. From three 1-pounder pom-poms, its sole defence at the beginning, it had come to possess 65 efficient guns, with a further 60 on order. There were searchlights in keeping with the growth of armaments, an observer organization, and a night-flying aeroplane defence which was destined, more than anything else, to crack the nutty problem.

There ensued three and a half months of quietude. At the commencement the enemy, to all intents and purposes, had the freedom of the air. The prolonged bout ended in his grave discomfiture. Summarized, the results were as follows:

There were 23 raids. Altogether 50 airships set out, of which 37 came in. There were 35 tons of explosive dropped, consisting of 1,541 separate bombs. £817,000 pounds worth of damage was done. Of defending aircraft 85 went up. Three pilots were killed and 2 injured. Of the general populace 208 were killed and 531 injured. There were no airship casualties over England.

It could have been much worse. The airship is by nature a prowler by night. Its menace lies in its power to be everywhere at once. Anxious for quick results, however, the enemy made little use of this attribute of ubiquity and preferred to concentrate on London. Thereby we were stimulated to organize a powerful defence. It might have been worse, but it was bad enough. For three more years, off and on, it had to be endured.

CHAPTER FOUR

THE CHRONICLE CONTINUED, SECOND PERIOD

I

PHASE II of the War over England was also, almost exclusively, a Zeppelin affair. It occupied the whole of 1916 and when it ended there ended with it the reign of the airship as a raiding weapon.

Hostile aeroplanes and seaplanes did, however, pay overhead visits to various places on the Kentish coast throughout the period, and these will be briefly listed before the main account is resumed.

There were 19, altogether, of these "tip and run" occurrences, 4 of them by night. In all 30 heavier-than-air craft took part on the various occasions, 14 of which were seaplanes and 16 aeroplanes. The former came in ones, twos, and, on one occasion, in a foursome; the latter came in singly, except for one batch of five. No less than 195 of our defending aircraft rose to the attack, a clear demonstration of the preponderating force required for protection against this form of raiding. Three of the raiders were brought down, 10 per cent. of their numbers being thus accounted for.

They were demonstration flights for the most part, or to reconnoitre for naval activity on the part of the Dover Patrol, and, with two exceptions, they were practically harmless. One of these exceptions consisted of a seaplane foursome which,

in mid-March, 1916, attacked Dover and Ramsgate, killing 14 and injuring 26.

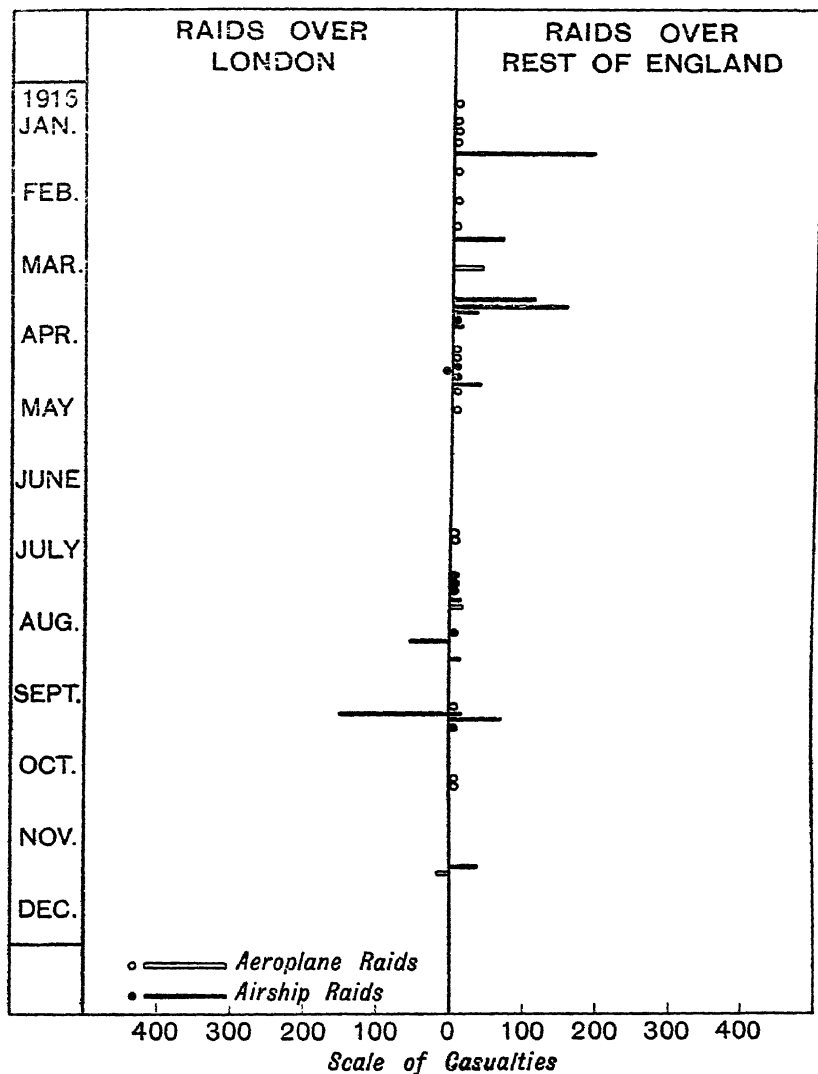
The other exception provided a foretaste of what Londoners would have to endure in the days to come of the Gothas and the Giants. On 28th November, 1916, a hostile aeroplane, invisible owing to haze and the height at which it flew, announced its presence over the heart of London by dropping bombs out of a noon-day sky. Six 20-pounders were dropped and they fell between Harrod's and the Victoria Palace Music Hall, injuring ten people. The life of the streets was in full swing when the unparalleled incident occurred. Moreover, two Zeppelins had been brought down in flames off Hartlepool and Lowestoft the night preceding by Royal Flying Corps pilots, and the victory was on everybody's lips. It was the deathstroke of the airship, people said. The shock of discovery, therefore, that London had now become a daylight target for aeroplanes dowsed the public joy.

The sequel to this daring, small-scale raid is of peculiar interest. The raiding machine developed engine trouble on the way back and made a forced landing near Boulogne. Six months were to elapse before this light overture was followed by the music of a full orchestra.

II

The chronicle of the air-raid period now under review, lasting from the end of January to the end of November, 1916, is much brighter reading from an historical standpoint. It records for the defence an ascending scale of success. No less than six Zeppelins were destroyed by air attack during the autumn months, and the Victoria Cross, at first regarded as the only suitable reward for the pilots concerned, in danger of losing value as a rare distinction, gave place to the D.S.O.

THE SECOND PERIOD



CHRONICLE OF THE RAIDS, SECOND PERIOD

The season commenced on the night 31st January-1st February, 1916, with a project to bomb Liverpool with nine airships. London for the time being was to be left severely alone. Rain and snow clouds baffled navigation from the outset and Shrewsbury was the furthest west that any of them got. Three out of the nine developed engine defects and departed seawards after performing small overland circuits. A fourth, having on board Korvettenkapitan Peter Strasser, Chief of the Navy Airship Service, circled Lincolnshire and dropped no bombs at all. No military targets could be identified and Strasser, all honour to him, refrained from bombing rather than risk civilian life and property.

The remaining five, though entirely "at sea" as to their precise whereabouts, visited and bombed vicinities as far afield and as widely placed as Loughborough, Ilkeston, the densely crowded area between Wolverhampton and Birmingham, Derby, and Burton-on-Trent. In all 70 people were killed and 113 injured. It was the first raid on the Midlands and the defences had not yet been extended thus far. The raiders had it all their own way. Twenty-two pilots went up to search for the enemy but, in the absence of searchlights, theirs was a hopeless quest even had the night been fine.

The immediate result of this disastrous visitation was the extension of the lighting restrictions to practically the whole of England; that and a hastily contrived warning system. In spite of these measures, however, the general provincial public, and especially those living in munition-making centres, continued in a state of extreme nervous trepidation. Lacking faith in the warning system they imagined Zeppelins in every night sky. The night-shifts would not go to work and output suffered a serious diminution.

The knell of the airship began to sound seven months later

with the crowning success at Cuffley. But at unequal intervals, before that, there were sixteen intervening raids. None of them penetrated very far inland. The range of flight was the Eastern Counties, Yorkshire, Durham, Northumberland, and, on two occasions, Scotland. Thrice, however, during the period London was attacked. The first two were military airship attempts and were without result. The third was by the redoubtable Mathy in his new command the L. 31 and obtained considerable success.

On the first occasion R.F.C. pilots from aerodromes on the north-eastern outskirts of London went up in chase. An airship was sighted by one of them, but as her performance nearly equalled that of the pursuing aeroplane he was unable to overtake.

The second time, Hauptmann Linnarz, who had won the "air raid stakes" by attaining London ahead of any naval airship in May of the preceding year, set out for the Capital in a brand new Army Zeppelin. But he was not destined to repeat his former success. He mistook Chipping Ongar for Leyton and bombed it without hurting a soul.

In one respect, however, Linnarz helped that night to make history. Eight night-flying pilots went up against him, of which two got near. Of these one was able to attack with long range machine-gun fire. It was Leefe Robinson, who was to benefit from the experience four months later and shoot down the S.L. 11 in flames within sight of a million onlookers.

Mathy's raid, the third of the three attempts on London, was carried out with that commander's usual daring. His L. 31 was the first naval Zeppelin to penetrate the London defences since Breithaupt, in October, 1915, ten months ago, reported the sinister presence of pursuing aircraft in the sky. He bombed the crowded dwelling area south of the Thames

between Deptford and Plumstead, killing 9 and injuring 40 people. One house which received a 660-pound bomb completely disappeared together with everyone inside.

The Royal Flying Corps pilots who went up from various aerodromes to attack Mathy encountered mist and cloud, and only caught, with one exception, fleeting glimpses of the L. 31. The exception was Captain Woodhouse who rose from Dover against the L. 32, Mathy's consort, which had been hampered by high winds off the Kentish coast. Woodhouse saw her in the Dover searchlight and promptly attacked. He fired at her from underneath and his first bursts of fire had no apparent effect. While he was changing the drum of his Lewis gun, and being thus fully occupied, the airship vanished from sight. But the aeroplane defence was gradually overtaking the Zeppelin attack. It was coming into its own.

The thirteen other raids in the series which preceded the historic occasion on the night 2nd-3rd September when the S.L. 11 fell in flames can be briefly summarized.

On the 5th-6th March, 1916, Hull, completely defenceless, was twice bombed with a loss of 18 killed and 52 injured.

The next attack, 31st March-1st April, although killing and wounding many, cost the raiders sore. The attempt was on London but none of the five airships which came in reached it. Instead, one attacked Grimsby, another Bury St. Edmunds, and a third Sudbury, Braintree, the Brentwood neighbourhood, and the estuary of the Thames.

Of the remaining two, the L. 13 was hit by a shell from the Stowmarket A.-A. battery and made off home. The fifth, the L. 15, under Breithaupt who had so significantly described his experience when raiding London in October of the preceding year, and who was now to bear witness to his melancholy foreboding, was crippled by shrapnel from the Purfleet

gun. While she was struggling out to sea Second-Lieutenant A. de B. Brandon, flying a B.E. 2c, caught up with her and heavily attacked with explosive darts and small incendiaries which he dropped on her from above. Alas, they did not do the trick and the Pomeroy bullet, which worked such fell mischief later, had not yet been invented. The Purfleet gun, however, had aimed truer than the gunners knew, for the L. 15 broke her back and came down into the sea fifteen miles north of Margate. But Brandon's near success was an inspiration to all the pilots of the defence. With better armament he would inevitably have brought down the airship on land. To the enemy the raid was a costly failure, though it resulted in 48 people being killed and 64 injured. During the attack on Grimsby a bomb fell on a chapel used by soldiers as a sleeping billet. In this one instance 29 were killed and 53 wounded.

The next night, 1st-2nd April, a Zeppelin raided the Durham coast from Middlesbrough to Sunderland. A great deal of damage was done at the latter place and 152 casualties were caused.

The nights were moonless and fine and thrice in succession the raiders now came, visiting Scotland, Norfolk and Yorkshire in rotation. In Edinburgh 11 people were killed and 24 injured. Hull was again attacked, but on this occasion was not caught napping. Anti-aircraft defence in the shape of guns and searchlights had been provided since the last visitation a month ago. In consequence the airship commander, the same who had then bombed a defenceless town, was so disconcerted at his reception that he drew off.

Three weeks passed and once more the weather conditions became ideal for raiding. Accordingly, on the night 24th-25th April, and on the two succeeding nights, the airships came in. They raided ineffectively.

CHRONICLE OF THE RAIDS, SECOND PERIOD

The first of this sequence of three was a naval airship affair conducted in co-operation with the bombardment of Lowestoft and Yarmouth by the German High Seas Fleet. It is interesting to recall that this bombardment was arranged at the request of the leaders of the Easter Sunday rebellion in Ireland, the idea being to divert attention from that unexpected event.

London, as usual, was the raiders' objective, but adverse winds caused a change of plan. The six Zeppelins, instead, dropped bombs over Norfolk and Lincolnshire without causing any damage. The L. 9, an airship out of date for raiding purposes, and therefore allotted for scouting to the fleet of bombardment, narrowly escaped disaster at the hands of two B.E. 2c pilots as she was flying low off Norfolk in the darkness of early morning.

The next two efforts were by military airships and included that of Linnarz in the L.Z. 97, who attempted, though without success to bomb London. No damage was done on either occasion.

A week later, the 2nd-3rd May, eight naval Zeppelins set out with the intention of bombing the Rosyth Naval Base and destroying the Forth Bridge. Strong head winds were encountered from the first, however, and all but two, adopting an alternative instruction, turned south to attack the Midlands. It was a fierce night of gale, snow and fog, with a bitter coldness in the upper air which coated the airship envelopes with ice. Owing to these conditions, except for an unlucky bomb which fell on York, killing 9 and injuring 27, the result of the Midland attack was nil.

There was even an element of humour in the grim undertaking. One of the raiders early dropped incendiary bombs on Danby Moor in North Yorkshire, setting the heather alight.

Other airship commanders, attracted by the fire and imagining here a target of extreme importance ready to hand, came over the spot and bombed furiously. Danby Moor in this way received four separate loads of bombs.

Of the two raiders who pursued the original instruction, one mistook the Firth of Tay for the Firth of Forth and bombed the fishing fleet in harbour. The other completely lost her bearings. She ran amok over the Scottish Highlands as far westward as the Caledonian Canal. In doing so she ran short of petrol and headed for the nearest land on the other side of the North Sea. It was Norway, and she badly damaged herself attempting a forced landing on the rough Norwegian coast. Her crew completed the destruction and then gave themselves up for internment for the rest of the war.

Three months elapsed before the next raid. The nights grew shorter and were also too light for comfort. Also, the aeroplane menace had become too acute to justify the risk of being caught at twilight going over, or in the dawn returning. Raiding was resumed at the end of July. During that month and the next there were six. Then came the beginning of the end.

Five out of the six in this series were complete failures. A boy was injured and some slight damage was done to buildings as a result of nearly 350 bombs dropped. The truth was that the Zeppelins, for security's sake, were apt now to fly at ceiling height, which spoilt their aim, and in avoidance of defended areas, which deprived them of bombing opportunity. Even the suggestive effect of the aeroplane contributed to occasion these tactics of timidity.

Our Royal Naval Air Service pilots, stationed up and down the East Coast, with seaplanes as well to fly, made the coastal fringe of England as dangerous for the raiders, both going and coming, as did the R.F.C. pilots further inland.

The Aircraft-Carrier *Vindex* was sent out to sea on likely nights with Bristol Scouts on board. Flight-Lieutenant Freeman on one occasion made three determined attacks on a returning raider while flying one of these fast types of aeroplanes. Shortage of fuel forced him on to the water far out at sea and he was rescued by a Belgian ship.

Flight Sub-Lieutenant Northrop, on a B.E. 2c, found an airship thirty miles out to sea one night while patrolling the Norfolk coast. He attacked and was expending his third drum of ammunition when it flew off into his face. By the time he had regained control the airship was out of sight.

Two Yarmouth pilots, another time, attacked returning raiders, pursuing them well out to sea. It was a double gauntlet which the Zeppelins had to run as the pilots increased their experience and were given better machines to fly.

An example of the timidity of approach which the improved defences in general, and the aeroplane threat in particular, imposed on the raiders is afforded by the large-scale raid of nine naval airships which took place on the night 8th-9th August. From the mouth of the Humber to the mouth of the Tweed, never coming overland, they bombed up and down the coast. It was a pecking process, as birds might dart and nibble at suspicious food rather than gorge greedily, and with a single exception all the bombs fell on barren ground. But the exception was unlucky Hull, thus for the fourth time the special target of the raider. Ground mist masked the guns of the defence and also prevented aeroplanes from leaving the ground. Actually a B.E. 2c did go up from Redcar and the pilot saw a Zeppelin in a searchlight ray over Saltburn. But he could not climb to the enemy's altitude. Ten people were killed and 11 injured in unfortunate Hull.

III

The rest of the story of this second, 1916, air-raid period is of success poured upon success. Since February the War Office had assumed full charge of Home Defence, appointing Field-Marshal Lord French as its responsible executive. Anti-aircraft guns and searchlights were increasingly available and R.F.C. squadrons as well. A protective system of Flight Stations, with their own searchlights and linked to "Warning Control Centres," extending from Dover to Edinburgh, was nearing completion by the autumn of the year. More important still, tracer and explosive bullets had passed out of the experimental stage and were being used by all pilots. So was the scene set for the historic raid of the 2nd-3rd September, 1916.

It was the most ambitious attempt as yet. Eleven naval and three military airships set out, all bound for London. It was a disastrous failure. Four people were killed and 12 injured for a total of 463 bombs dropped. The weather may have been partly accountable. There was a good deal of cloud about and mist on the ground. But the overwhelming reason for the failure was the destruction in full flight of the S.L. 11, accomplished by Lieutenant Leefe Robinson in a B.E. 2c.

This epic event will be related in fuller detail further on. It is only necessary to say here that it immediately took the heart out of the attack. Most of the consorting airships witnessed the appalling spectacle as they converged on their objective, and those that did not were quickly apprised. With one accord they turned away, lightening themselves by an indiscriminate dropping of bombs to attain greater height and speed. The most ambitiously conceived of all the raids on London, contrived for the purpose of London's utter destruc-

tion, devastating had it been successful, and perhaps even decisive, had become as naught, killed by communicated fear.

Three weeks later they came again. They had no option. The German public faith in the supremacy of the Zeppelin as a chief means of destroying the most hated of its enemies had suffered no reverse with the burning of the S.L. 11. For the High Command to draw in its horns now were to admit that the god had feet of clay. There would be reaction and despondency far-reaching in effect. The raids must and should continue.

They came nine strong, in two detachments. Six older type Zeppelins were detailed for attack on the Midlands. The other three, super-Zeppelins all, aimed at London. The Midland raiders flew warily, avoiding defended areas and sheering off as soon as anti-aircraft fire opened. The result of the effort would have been negligible but for a bomb on Nottingham which killed 3 people and injured 16.

Of the three super-Zeppelins which attacked London, one was destroyed in the air at 13,000 feet by Lieutenant Sowery in a B.E. 2c and fell in flames at Billericay. The second was crippled by anti-aircraft fire when over East London after killing 11 people and injuring 26 with her bombs. Limping homewards she was engaged by Second-Lieutenant Brandon, the pilot who had so nearly succeeded with the L. 15 nearly six months ago. He was again unsuccessful, but the Zeppelin was not to escape. In the process of a forced landing south of Colchester, due to loss of gas, she caught fire. So little gas, however, was left that the flames did not take good hold and she burnt herself out, leaving the main structure undamaged and enabling us to copy her design.

The third "super," the L. 31, Mathy in command, flew

across London from south to north. He performed according to his usual high standard and inflicted 96 casualties, mostly in Streatham and Brixton. But his sands were running out. A week later he too fell in flames.

The double victory of this night, following on that of Leefe Robinson three weeks before had keyed the public up to hope for too much. The defence organization was severely blamed for having let the arch-raider, Mathy, slip through its fingers.

Astonishing to relate another raid took place the next night. The High Command was like a gambler who can only recoup his losses by staking more and more, and there was always the necessity of calming public opinion at home by an added show of force.

It was the bold Mathy who was out again for London, and with him set out three others of older type who had also taken part in the preceding raid. But these were bound again for the Midlands and this time, heartened perhaps by Mathy's courageous example, they flew more boldly and reaped a fair harvest of human lives.

One of them got as far west as Bolton in Lancashire, where 13 people were killed and 10 injured. Another bombed Sheffield, narrowly missing the great armament works in and around the city. The visit was by no means fruitless, however. Bombs fell on some cottage property in a poor quarter, killing 28 and injuring 19 of the inhabitants, men, women and children.

Mathy set out for London, as has been said. But he had been ordered to take no undue risk. Judging, therefore, the night to be too light for his purpose, he flew instead along the South Coast to Portsmouth and back. Over the town and harbour he was blinded by the searchlight display and hastily, as he

thought and so reported, dropped all his bombs on the dock-yard. What really happened will be for ever a mystery, for none fell on land.

The story now approaches a conclusion. On the night 1st-2nd October seven airships raided the Eastern Counties, two of which had the evident intention of attacking London. Needless to say, Mathy and the L. 31 were of the latter.

The five others made the darting, hesitant, timid flights which had of late been their vogue and went out again without doing any damage.

Neither of the two London-bound Zeppelins reached their objective and only one of them returned in safety. It was not Mathy. Approaching from the north he was heavily engaged by the guns of the North London defences and persistently held in the searchlights. Abandoning hope of accomplishing his mission he quickly released his full load of bombs over Cheshunt and turned west momentarily to escape the gunfire.

Meanwhile four R.F.C. pilots were in pursuit. Second-Lieutenant Tempest was the first to overtake the entrapped Zeppelin. He brought her down in flames from a height of 15,000 feet. The most daring and successful of all airship raiders had met his doom. This time the enemy did react to the blow. London was never again deliberately bombed by airships during the War.

Two months passed after this further disaster to the German Airship Service, and when the raiding was resumed the North of England was substituted as an object of attack. It was the 27th-28th November, 1916, and nine Zeppelins in two groups came in. The super-Zeppelins flew over the Tyne area and the others over Yorkshire, between Scarborough and Hull.

The L. 34 of the northern group had only just passed over the seaboard when she was seen illuminated in a searchlight

beam by Second-Lieutenant Pyott. It was about midnight and Pyott was on patrol for the second time that night. He immediately attacked and brought the L. 34 down in flames from 10,000 feet off the mouth of the Tees.

The effect was instantaneous. Her three consorts, two of which had not yet made their landfall, saw the calamity, jettisoned their bombs and turned for home.

The Yorkshire raiders, forming the second group, with a single exception wandered nervously over the county as far inland as York and Pontefract, avoiding as best they might localities which might harbour aeroplanes, searchlights and guns. The exception was the L. 21.

This Zeppelin flew westwards to Newcastle-under-Lyme on a devious course. Thence she turned east on her way out to sea via Peterborough and Yarmouth. She was twice attacked by aeroplanes over the former place but neither of them got near enough for effective fire.

Dawn was breaking as she appeared over the coast and was sighted by three naval pilots. They attacked her in succession. Flight-Lieutenant Pulling, the third of the three, was also the successful one. His second burst fired her and she fell blazing into the sea eight miles from Lowestoft.

It was the end of a phase. Our continued success could no longer be withstood. There were subsequent airship raids over England before the end of the War. There were eleven altogether. But they were singularly unsuccessful, and in one of them, the famous "Silent Raid" of October, 1917, five out of the eleven airships employed met with condign disaster. Until the first daylight Gotha raid on Kent, in May, 1917, we were given almost a complete rest. The aeroplane had proved supreme.

This is a summary of the whole period. There were 22

CHRONICLE OF THE RAIDS, SECOND PERIOD

raids. One hundred and sixty-four airships set out, of which 123 crossed over. A hundred and twenty tons of explosive were dropped, representing 3,483 bombs. £600,000 worth of material damage was done. Two hundred and sixty-one defending aircraft went up. Three pilots were killed and 8 injured. Two hundred and ninety-three people were killed and 692 injured. Two airships were destroyed by gunfire and five in air combat.

CHAPTER FIVE

THE CHRONICLE CONTINUED—THIRD PERIOD

I

PHASE III of the War over England commenced in the middle of February, 1917, and ended early in September of the same year. It was thus of seven months duration and was wholly characterized by a new form of attack, that of daylight bombing by means of large, multi-engined aeroplanes. A few remarks descriptive of the manner in which this development arose may well precede the story of the period's activity.

Bombing, curiously enough, apart from the Zeppelin variety, was never a popular pastime with the German Air Force as a whole. As soon, therefore, as the rate of aeroplane output permitted it was relegated to a specialized branch. Neither, as a matter of fact, was bombing enthusiastically regarded by our own pilots, especially, be it said, the long distance form of enterprise.

Both our own and the enemy pilots much preferred the more active and rewarded forms of aerial work over the lines to the dull flight out and back, the attainment of the objective, and the uncertainty of result which characterized long distance bombing. Even though much more dangerous they preferred it. The long flight was wearisome, inert, beset with unknown perils, and capture was inevitable in the case of a forced descent. Better, they thought, to face accustomed risks within reach of home than to traverse a vast stretch of sky for the sake of a

momentary activity at the far end. There was also the haunting possibility of being ambushed on the return flight.

Very early in the War, in 1914, when the enemy success was such that they could justifiably consider the Channel ports their own, a special bombing squadron was formed for action against the south of England. It was disguised under the name of the "Ostend Carrier Pigeon Squadron," the personnel of which was quartered in railway sleeping-coaches to increase mobility. But the dream never came true. The plan to operate from Calais, Dunkirk and Boulogne against England was never realized and the energy of the Carrier Pigeons was diverted to bombing on the Western Front. The type of aeroplane employed for this purpose kept pace with the general improvement as the War progressed, with always a special eye towards renewal of the aforethought enterprise.

In this way the Gotha, or G-type, came to be developed and was tried out in the first instance against the Allies in Macedonia. It was twin-engined, with a crew of three. It carried three machine-guns, one of which was arranged to fire downwards through a sleeve in the fuselage and thus provide defence for what had hitherto been a blind spot. It could carry 660 pounds weight in bombs; it had a ceiling of 18,000 feet; it could fly at eighty miles an hour.

By the time the Gotha, as a production type, had passed through its teething troubles, and was ready for launching over the lines in France, the performance of our own single-seater fighters, and the prowess of our pilots, so menaced the safe carrying through of its duty as a long distance bomber that it was soon employed on night work only. Its use was thus restricted and the energy put into its quantity production was largely waste.

When, therefore, in the autumn of 1916, the Zeppelin had

been definitely defeated by the pilots of the Home Defence on their antiquated B.E. 2cs the German High Command had a happy idea. Why not use the G-type in place of the airship? The Gothas had an air endurance of five hours and could easily make London and back. England's system of defence did not include single-seater fighters. Why should it? They were not night-flying machines and therefore of no avail for Zeppelins which always chose the darkest nights. Eighteen Gothas, moreover, could carry a weight of bombs equivalent to three Zeppelins, a greater number than had ever reached London simultaneously. Let a fleet of Gothas be assembled, and let it be employed in this extremely common-sense fashion.

So the argument ran, and so, accordingly, was the plan adopted.

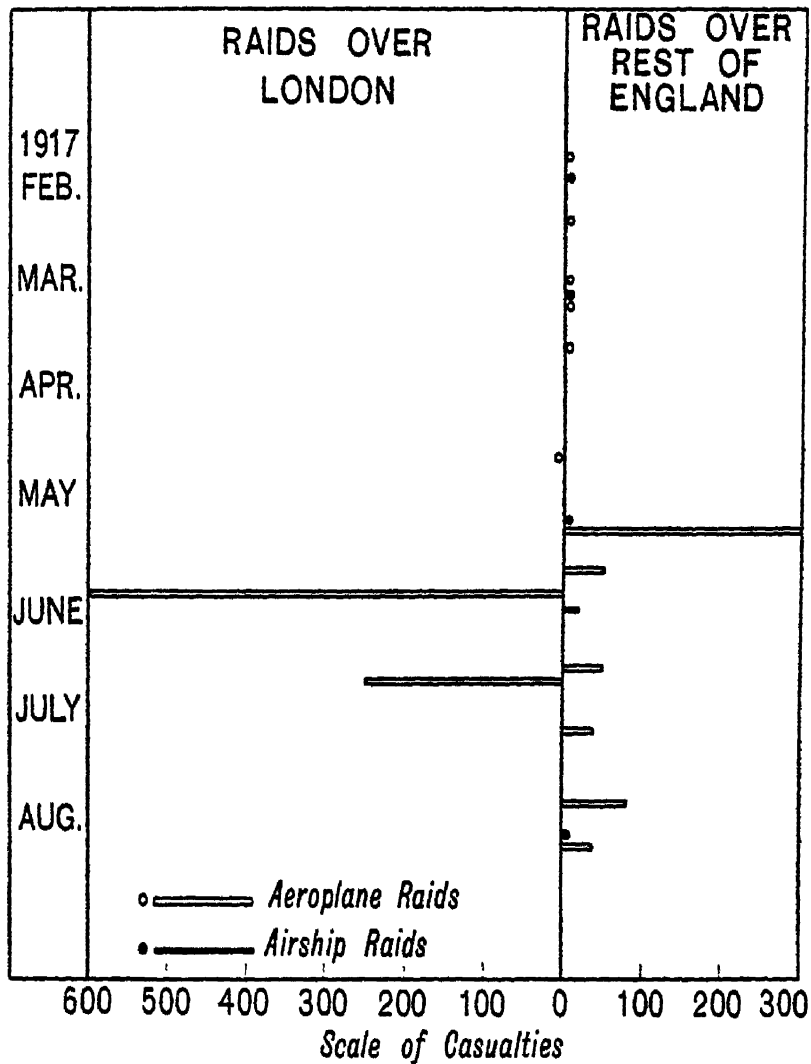
II

Although the period of seven months under review was the period of the Gotha daylight campaign and wholly characterized as such, a few airship raids did sporadically take place. There were five in all, timid and half-hearted attempts and quite unsuccessful, with disaster attending on the second and fourth. They can be disposed of in a very few words.

The first, on the night 16th-17th February, 1917, was carried out by a single military airship and effected nothing. She was seen over Deal and heard over Ramsgate, but no bombs were dropped on English soil. The only result of the raid was to restir disquietude in the public mind which had been lulled into a sense of security since the double victory on the night of 27th-28th November, 1916, two and a half months ago. Wild rumour began again to fly.

The second was a raiding attempt on southern England, to

THE THIRD PERIOD



be extended to include London if circumstances proved favourable, by four naval Zeppelins exactly a month later. Circumstances, as it happened, were far from favourable, for an unexpected depression developed from Iceland and three of the raiders had much ado to get back home in safety. The fourth was not so fortunate. She was brought down in flames by French gunners near Compiègne in the half light of dawn as she was attempting to steal across the lines with engines cut off and drifting before the wind.

Over two months later, 23rd-24th May, they tried again, five airships coming in over the Eastern Counties. They had no success, largely owing to snow and hail in the upper air, with thunderstorm areas lower down. One of them came within an ace of destruction by the pilot of a flying-boat belonging to the Yarmouth defences. This raid occurred on the eve of an eventful day for England. The first of the Gotha daylight raids took place on the succeeding afternoon. Shorncliffe and Folkestone were bombed with great loss of life.

In the course of these three airship attempts 140 bombs were dropped and only one person was killed. Truly the Zeppelin sting had been drawn.

A three weeks airship holiday ensued and then, on the night 16th-17th June, two naval airships raided the Suffolk coast and the Isle of Thanet. Ramsgate was successfully bombed, with a loss of three killed and 16 injured, and great military damage to the harbour. In that way the raid can be accounted a partial success, though it was obtained at enormous cost. For the L. 48 was attacked simultaneously by two R.F.C. pilots at 16,000 feet. The *coup de grace* was administered by Lieutenant Watkins of the Canadian Army in a B.E. 12, a fast single-seater, and the airship in flames descended slowly into a field fifteen miles north of Orford Ness. Her companion,

the L. 42, would have undoubtedly suffered a like fate if the petrol pipe of her pursuer, a Sopwith Pup flown by Flight-Lieutenant Cadbury, had not fractured at the critical moment.

The final airship raid during Phase III of the War over England was a mysterious affair altogether. Eight Zeppelins set out on the night 21st-22nd August for the Midlands, flying at an immense height. Only one made its presence felt, bombing in the neighbourhood of Hull and injuring one man. The movements of the remainder are shrouded in mystery. Pontefract reported airships overhead and so, later, did Rochdale in Lancashire. The dull reverberation of bombs exploding was also heard in Doncaster. The fact remains, however, that no bombs were traced other than those which fell near Hull.

These Zeppelins flew at the enormous height of 20,000 feet, nearly four miles high. They were thus beyond the reach of aeroplane pursuit and, to all intents and purposes, safe also from searchlights and anti-aircraft guns. The High Command had by no means abandoned Zeppelin attack as a punishment for England and the sudden appearance of this high-flying type was grim earnest of their resolution.

It remains to mention a minor activity. On six occasions, three of them by night, small type aircraft performed antics of the "tip and run" variety over points on the Kentish coast. Harbour reconnaissance, especially of Dover and Ramsgate, was probably the motive which prompted these pecking tactics. But there was one exception. On the night 6th-7th May five small bombs were actually dropped on London in the neighbourhood of Highbury, killing one person and injuring two others.

Such was the prelude to the daylight campaign by the Gothas, so cruelly destructive of life, which will now be narrated.

III

Constantly augmented by a feverish factory activity the Gothas, meanwhile, had been assembling on the Belgian aerodromes allotted to them. It was a process at first of discovering and curing the many minor ailments to which all new-type aircraft are peculiarly liable. But by mid-May all was accounted ready and the eager pilots were straining at the leash.

On the afternoon of 25th May the word "go" was given. It was an armada of twenty-one, flying at 12,000 feet, which came in north of the Thames estuary. They flew at first in rough line abreast before splitting into two group formations and, as we now know, were bound for London. They came in at 5 p.m. and went out over Folkestone at 6.30.

Clouds in scattered formation and in dense banks diverted them from their original aim. They were not easily descried in the rack above and many people, listening to the loud engine noise with the peculiar cadence attaching to multi-power units, as of a blue-bottle close to the ear, imagined that Zeppelins had come by day.

Warnings were quickly disseminated, but for some unaccountable reason, although Dover was well on the alert, neither Shorncliffe nor Folkestone were put on guard. And it so happened that these two places suffered the full force of the attack. In the military camp 17 Canadian soldiers were killed and 93 wounded. In Folkestone, during a crowded shopping hour, 72 were killed and 91 injured, a total almost entirely made up of women and children who were queueing up for provisions.

No less than seventy-four Home Defence pilots went up to attack, but the Gotha ceiling was higher than theirs and their uncoordinated attempts to engage the mass formations met

with no success whatever. Once again, in the third year of the War, a new phase of attack at home had found our defences completely unprepared and inadequate. A deep resentment at such proven inefficiency to protect the populace burned in the public breast. The shambles in Tontine Street, Folkestone, where most of the casualties occurred, had at last epitomized the hideous horror of modern war.

Before the torrent of expostulation and of official utterances on the subject had even reached high-water mark the attack was renewed. The Gothas repeated their visit on 5th June in the same numbers as before and, this time, in a cloudless sky.

Whether London, on this occasion, was their mark or not is unknown, but the town of Sheerness was the one to suffer. During a five minutes bombardment from the sky 11 people were killed and 34 injured. A Gotha, it is true, was brought down at sea by anti-aircraft gun fire, but our pilots' efforts were in vain. Sixty-six ascended to make individual attacks and, as on the previous occasion, although a few did get within machine-gun range, they obtained no success.

No doubt whatever existed regarding the purpose of the succeeding Gotha visitation. London was the sole aim and object, and it was reached and raked by 18 of the monster aircraft on 13th June, eight days later. It was about the noon hour and the bombs fell in clusters from East Ham to Finsbury. The casualties mounted up to 594, of which 162 people were killed, and the saddest centre of loss was at a Council School in Poplar where 46 infants were the victims. The return to earth of shell fragments from our own anti-aircraft fire accounted for 20 of the casualties.

The effect of this epochal raid on public opinion and the consequent reaction on the policy of Home Defence were wide and far-reaching. The horror of it stirred the country

and the War Office was impelled to a drastic decision. This was no other than the doubling of the Royal Flying Corps to a total strength of 200 squadrons, an increase which was to be brought about even if the "tank" output should suffer thereby.

In addition a system of air patrol by single-seater fighters was instituted on both sides of the Channel. It meant the withdrawal of a fighting squadron from France and the proposal was agreed to by Sir Douglas Haig with extreme reluctance. An S.E. 5 Squadron was selected and stationed at Bekesbourne near Canterbury, on loan for a fortnight. An offensive was impending in Flanders and the Commander-in-Chief, acting on the advice of his senior Royal Flying Corps Officer, stipulated that he must not lose the services of a valuable fighting unit for a longer period. Accordingly, without having spread its wings once in the service of Home Defence, it flew back to France on 6th July, and on 7th July twenty-two Gothas were over London again, having approached by the accustomed route.

This second daylight raid over London was preceded, three days earlier, by an early morning visit by 18 Gothas, to Felixstowe and Harwich. The latter place suffered no damage, but at Felixstowe there was considerable loss of life, chiefly to soldiers and sailors. Seventeen were killed and 30 wounded. Eighty-three defending aircraft rose to attack, but the enemy stayed over the actual coast-line during their brief appearance and could not be located.

Three weeks exactly intervened between London's first daylight raid and that of 7th July. Just before 10 o'clock in the morning 21 Gothas came in north of the Thames estuary and made direct for the heart of the city. The formation had originally consisted of 22 machines, but one developed engine trouble and had been obliged to give up the main enterprise.

Flying on its homeward course it came over Margate and dropped three bombs. A man, four women, and a child were thus accounted for.

The large formation of twenty-one bombed steadily from Islington to near St. Paul's, and then, turning east, sowed the remainder of their load between the Bank and Fenchurch Street Station. Seventy-three bombs were let fall, representing a dead weight of three tons, killing 54 and injuring 190. Although not known at the time 27 per cent. of the casualties were caused by shell fragments from the anti-aircraft gun fire.

The list of killed and injured on this occasion was only a little more than half compared to the first raid of 13th June. The populace had been educated in grim fashion to the realities of the situation. On the first visit the curious in their thousands had stood about, inclined to the belief that they witnessed a display of their own aerial power. But the second time the situation was grasped in a twinkling and there was a universal rush for cover.

Ninety-five Home Defence pilots, naval and military, ascended to the attack, though to little purpose. They rose from various widely scattered aerodromes without plan and engaged in piecemeal fashion. Many of their machines were quite unsuitable for such a task. Thirty-six combats took place at long range, and one Gotha was shot down off the North Foreland into the sea by Second-Lieutenant Grace. It was a first success though a small one. The loss of an aeroplane, even though a Gotha, had no repercussive effect equivalent to the destruction of an airship.

The daring of this raid, the impunity with which it was carried out, its sheer impudence, the humiliation of it, and the prospect of endless repetition, compelled from an outraged public instant Governmental action. In spite of the intensive

fighting in Flanders, where battle was now joined, a fighting squadron was again withdrawn from the Western Front and put down near Romford in Essex. Even more to the purpose, a senior Flying Corps Officer, it was decided, should be selected to take over executive command of the London defences. The choice fell on Brigadier-General E. B. Ashmore, an artillery officer, then in France, who had lately commanded a Flying Corps Brigade, and in the resulting reorganization he became virtually responsible for the air defence of the entire country.

This historic raid had a further indirect result, though not of immediate tendency. The Air became important in men's eyes. Matters of supply, development and even fighting efficiency were being hampered by the clumsy partition of the nation's Air Service between the Army and the Navy. The wrangling between the two as to which should come first was sometimes an ignoble spectacle in time of war. Thus was created the demand for a separate Air Force which came into being by Royal Decree on the 1st April, 1918, nine months later.

The second daylight raid on London was also the last. Londoners were soon to be called on to endure a worse form of attack which added the dread of darkness to the terror of the bomb. The capital had not been assailed thus since the L. 31, with the redoubtable Mathy on board, had fallen a flaming mass at Potter's Bar, on 1st October, 1916. There was more raiding by daylight, but it spared London.

The raiders had not quite had it all their own way. They were sensible of the growing menace to themselves of air attack, and well they knew that the air units of Home Defence were being re-equipped with efficient aeroplanes potent to engage them on more than equal terms. The anti-aircraft gun fire, also, was improving in accuracy to a disturbing degree

and was already far more than a deterrent. The London Defence Area, in fact, was fast becoming a veritable hornet's nest which it were much better not to excite into activity in the broad light of day.

Three final raids preceded the opening of the moonlight campaign.

On 22nd July twenty-two Gothas again raided Harwich and Felixstowe, the latter place again coming off worse with a casualty roll of 39, most of them belonging to the services. No less than 121 Home Defence pilots flew to attack, many of whom were mistaken for hostile and were fired at by the anti-aircraft guns.

The raid, however, was essentially of the order of "tip and run." The Gothas were inshore for so short a time that very few of our pilots were even successful in locating them. The enemy suffered the loss of one machine, shot down by a Royal Flying Corps pilot patrolling the French side of the Channel.

On 12th August the attempt was repeated by ten Gothas. Following the coast in a south-westerly direction from Felixstowe the formation leaders were startled to perceive a large number of Sopwith Pups beneath them, which seemed rapidly to be gaining height. They at once turned off to sea with full engine on and commenced to straggle, evidently scared at the prospect of being attacked by an outnumbering formation of efficient, fighting scouts. On the way out the Gothas dropped their bombs on Southend, killing 32 and injuring 43.

Though only one was shot down the raiders on this occasion had a really hot time. On the way over they had been already pursued by naval aeroplanes from Dunkirk, and now they were engaged by the Pups and by other pilots, flying individually, who were on the scene. The Dunkirk pilots re-engaged them on their return off the Dutch coast when they

CHRONICLE OF THE RAIDS, THIRD PERIOD

were very nearly home. It is significant, in view of the harrying to which they had been subjected, that four out of the remaining nine crashed on landing.

The last of the series, and the last altogether of the daylight raids, took place ten days later, on 22nd August.

Eleven came over bound originally in three detachments for Sheerness, Chatham and Dover. But their reception at the hands of the defence was such that the plan was scrapped in favour of hasty bomb-dropping and a quick scurry home. Ramsgate and Dover were thus victimized, 39 casualties occurring between the two places.

The moment they made their landfall the defence became most active. The anti-aircraft gun fire was heavy and accurate, two of the Gothas being brought down by this means. A third was shot down in aerial combat. Of Home Defence pilots 137 went up in pursuit and continually engaged the enemy, while the Dunkirk pilots lay in wait and further harried the survivors on their way back.

In face of this constantly increasing efficiency of the defences the German High Command debated the matter. The senior Air Officer reported that without machines capable of climbing fully loaded to 15,000 feet further daylight attack was inadvisable, and on this advice it was decided to forgo it.

There had been eight altogether, and the first, taking us completely by surprise, was little more than three months old when this decision was arrived at. For the third time in succession a definite phase of the War over England had been brought to a conclusion in the same way; by a laggard defence eventually overtaking the attack. We had worried through again.

A new phase was to open almost immediately. It involved no great difficulty of organization. It was merely the substitu-

tion of darkness for daylight, and it was to try us as we never had been tried before.

IV

The following is a summary of the daylight raiding period.

There were eight raids. A hundred and sixty-seven Gothas set out, of which 144 came inshore. Twenty tons of explosive were dropped, representing 648 bombs of various size. The material damage amounted to £404,628. Eight hundred and one Home Defence aircraft left the ground to attack. Four pilots, or observers, were killed and two wounded. Of the populace, including service personnel, 401 were killed and 983 were injured. Three Gothas were destroyed by A.A. fire and three in combat.

A short comparison between the second Zeppelin period, during which the airships attained London at will, and the daylight period serves to show the superior deadliness of the aeroplane form of attack.

The contrast shows that 123 airships took part in raids, and 144 Gothas. In the former case 120 tons of explosive were dropped, and in the latter only 20. In round figures the Zeppelins killed 300 persons and injured 700. The Gothas killed 400 and injured 1,000.

In arithmetical terms, therefore, it can be said that raiding by aircraft was between eight and nine times as slaughterous as raiding by airship.

CHAPTER SIX

THE CHRONICLE CONTINUED—FOURTH PERIOD

I

WE come now to the fourth and concluding phase of the War over England, that of moonlight raiding by Gothas and by still larger aeroplanes, the Giants. Once more the record is of a defence taken by surprise, gradually adapting itself to the situation and, finally, emerging triumphant.

There is little doubt that had the War been prolonged we would have been obliged to adapt and re-adapt *ad infinitum* to ever newer methods of attack. The enemy had many a shot left in the locker. The airship menace, for instance, although effectively scotched had by no means been killed. The force of public opinion in Germany was still strong to send the Zeppelins out on their predatory excursions. The people fully believed that they wrought incalculable mischief on each and every raid, and the High Command, knowing better but fearing to disabuse the populace, could only respond by turning out super-super-types, flying high enough and fast enough to be out of harm's way. Such an effort was the "Silent Raid" of October, 1917, shortly to be described.

Multi-engined aircraft of the Gotha and the Giant type were also in their infancy. At the time of the Armistice we had bombers, based in Norfolk, capable of flying to Berlin and back, and we were not ahead of the enemy in the science of

aerodynamics. What might he not have developed in the same way had his military power remained intact? The bombing of Berlin would probably have hardened his endeavour to the introduction of chemical and bacteriological warfare on our home front which we know now to have been in contemplation. We were facing a most pertinacious foe.

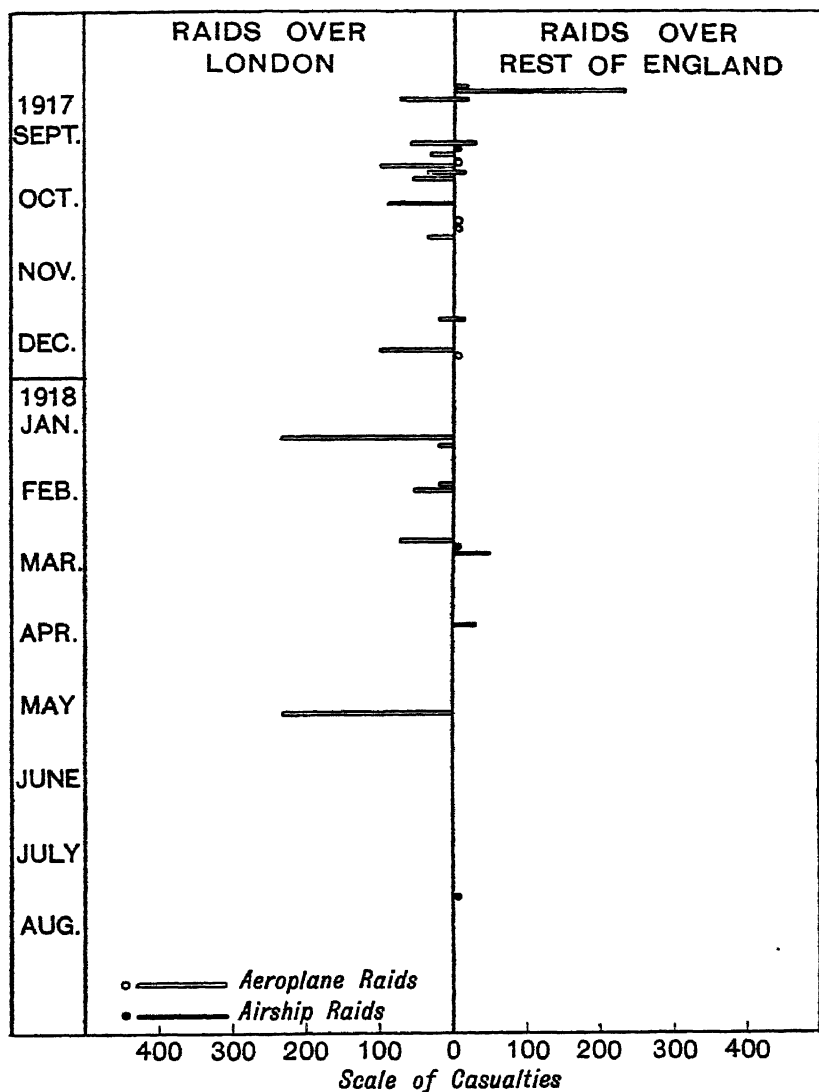
As so it happened, the tide of affairs in France and Flanders turned so decisively and suddenly in our favour from the 8th August, 1918, onwards, that the enemy could find no breathing space and became sheerly incapable of maintaining the huge organization necessary for persistent raiding over England.

II

Although the enemy's activities during this fourth, nine months' phase of attack, lasting from September, 1917, to May, 1918, were almost exclusively those of aeroplane raiding by night, there were as well six airship visits interspersed. Of these, three were resultless and three obtained a measure of success. It will be convenient as before, and clarifying, to relate first the minor activity of the period under review, and then shortly describe in sequence the raids by the light of the moon.

On 24th-25th September, 1917, five Zeppelins visited over Lincolnshire and Yorkshire, as a result of which three women were injured in Hull, the coco-nut shy of England's raiding ground. Low clouds and half a gale of wind from the west were handicaps both to the airships and to the pilots of the defence. In consequence only one out of the 37 who went up came within reach of the enemy. This was Second-Lieutenant Cook, who most gallantly pursued the L. 42 sixty miles out to sea on a B.E. 2e, though without success.

THE FOURTH PERIOD



CHRONICLE OF THE RAIDS, FOURTH PERIOD

The more efficient aircraft of the defence were stationed nearer London and the machines further afield, as in the case of Cook's, could not attain the ceiling of 16,000 feet at which the Zeppelins flew. The airships, moreover, still flew timorously, as well they might, and did not come far inland.

The next attempt, a little less than a month later, will for ever be unique in the annals of air-raiding warfare. It was the celebrated raid of 19th-20th October, 1917, in which eleven naval airships of excelling performance set out to destroy the whole of the Midland industrial area. The elements, rather than our defence organization, on this occasion disastrously defeated the enterprise.

That Icelandic depression, so familiar now to listeners-in, but quite outside the scope at that time of the enemy's meteorological knowledge, was fast approaching the British Isles from the North-north-west. A condition of calm at low altitude merely disguised the fact that a tempest was raging in the upper air. The airship fleet consisted of latest type Zeppelins capable of reaching a ceiling of more than 20,000 feet.

Before coming in they climbed to this great height, or thereabouts, anxious to be above the zone of ground and air attack ere making the landfall. Quickly they found themselves in the grip of the gale. The sound of their quintuple engines was so carried away on the wind that they were inaudible from below, and although we knew that they were somewhere overhead we had no actual knowledge of their whereabouts. The guns of the defence did not open, nor did the searchlights play. Seventy-three pilots left the ground, but not one of them flew a machine capable of reaching the height of the enemy. If the weather had not come to our rescue the Zeppelins could have bombed at will.

As it was, held in the power of the storm, they careered over

the South-east and East of England in a manner of blindman's-bluff at a freezing altitude. So cold was it that for an engine to stop meant instant seizure; so high did they fly that the crews were starved of oxygen and suffered dreadfully from height-sickness.

Finally they departed helter-skelter with the fury of the gale impelling them onward, and this is the manner of it.

One only, of the eleven, succeeded in flying back according to schedule via the North Sea. Two regained their sheds by way of Holland, infringing that country's neutrality. Four others managed to cross over the British or French lines before dawn broke, one of which finally wrecked herself in a forced landing. The remaining four met with dire disaster.

One was brought down in flames by French gun fire. A second was forced down near Marseilles by shortage of fuel and was fired by her crew. The third, threatened with destruction by the pilots of a French "Nieuport" squadron, landed and fell intact into the hands of our ally. The fourth attempted to land not far from the Swiss frontier. In the attempt she was shorn of her forward gondola, most of the crew either falling or jumping out. Thus lightened, she sprang again into the air, taking four hapless men with her, drifted uncontrolled southward out to sea near Toulon and was finally engulfed in the waters of the Mediterranean.

So ended this historic raid. Had the elements not fought on our side that night, and day following, of dire disaster to the enemy the airship menace would have been again rampant. As it was the reverse was too crushing even for German perseverance, and the four raids which followed before the closing of the Zeppelin chapter forever in August, 1918, were inconsiderable attempts.

The raid would also have been without loss of life or injury

to limb but for a piece of sheer bad luck to offset the good. A little before midnight the L. 45, one of those which later met disaster, found herself quite unexpectedly over London and dropped seven bombs, killing in all 36 people and injuring 55. One unlucky missile fell in Piccadilly Circus where people had re-congregated under the impression that the silence of our guns could only mean that all danger had passed. In this way 25 out of the total casualties were caused. The precinct was a litter composed of broken glass and the shop-window contents of Messrs. Swan & Edgar, but the fountain escaped damage and Eros continued to stand poised ready to let fly an arrow.

The rest of the airship story is soon told. Not until mid-March, five months later was there another attempt. This period of immunity reflected, not only the staggering blow which the Naval Airship Service had received as a result of the "Silent Raid." It had another and as great a loss to bear. In January, 1918, four Zeppelins and a Schutte-Lanz were accidentally destroyed by fire while in their sheds at the main base of Ahlhorn.

On the night 12th-13th March three super-Zeppelins raided the East Riding of Yorkshire. It was a night of low cloud, rain and ground mist, conditions which nullified the defence, and equally handicapped the attack. It failed completely, a woman at Hull dying of shock.

The next night a single airship, one of three which set out, made a boomerang flight which touched at the Hartlepoons in South Durham. In the mistaken belief that the raid would not eventuate a warning was not issued and the industrial area was well lit up. In consequence 8 persons were killed and 39 injured. The Zeppelin was gallantly pursued forty miles out to sea by an F.E. 2d, but the pilot could not get to within 3,000 feet of the airship's height.

A month later, the 12th-13th April, 1918, they came again. It was a bolder effort this time. Out of five which arrived, one reached Wigan and Warrington in Lancashire, and another the outskirts of Birmingham. It was an attempt to restore the shaken prestige of the Naval Airship Service. Almost completely immune from aeroplane and gun attack owing to their ceiling of 23,000 feet and their speed of more than 70 miles an hour, they were laden with two and a half tons of bomb weight. Seven people were killed and 20 injured, a loss of life and limb caused solely by the commander of the L. 61 who bombed Wigan, thinking it was Sheffield.

The final airship raid took place five months later on the night 5th-6th August, 1918. It was the fifty-first since the commencement of the War. Five raiders set out under the leadership of the L. 70 which had on board Fregattenkapitan Peter Strasser, the senior officer of the Airship Service. It was also the fourth anniversary of Britain's entry into the War. The enemy was apt to betray an anniversary sense of the fitness of things. It was the first flight of the L. 70 which was the latest of its kind and had only been commissioned a month before. It was also the last. The D.H. 4 was now being flown by many of the pilots of the defence, an aeroplane mounting a Liberty engine which could cope with any Zeppelin in the sky.

The raid was a failure ending in disaster. No bombs fell on land and only two of the raiders even impinged on our territory. Major E. Cadbury, together with his observer, Captain R. Leckie, brought the L. 70 down in flames eight miles out to sea off Holkham on the Norfolk coast. The attack was at 16,400 feet, a mile above the topmost cloud-layer.

The other airships sheered off as usual when they saw the portent in the sky, but Cadbury attacked again and if his

CHRONICLE OF THE RAIDS, FOURTH PERIOD

observer's Lewis gun had not chanced to jam with a double-feed he would almost certainly have gained a second victory. His own front gun he could not use because he had reached his ceiling. Cadbury flew on after this for another half hour in further search and then, descending through four separate layers of cloud, sighted flares and landed at Sedgeford after being a whole two hours in the air.

Three days later in France Rawlinson's Fourth Army commenced the hundred days of battle which ended with the Armistice. Raiding over England was dead.

The moonlight aeroplane raids, which will now be described, had ceased in their turn since the middle of May owing to increasing loss at the hands of the defence.

III

It will be remembered that the daylight raiding ceased on 22nd August, 1917, with the destruction of three Gothas out of eleven which were bombing on the Kentish coast.

Almost at once, their plan prepared, the High Command switched to moonlight raiding as an obvious alternative. It was long since Londoners had felt that after-dark apprehension which anticipation of a Zeppelin raid occasioned on moonless nights. They had all but forgotten the sensation. And now it was to be renewed in a manner peculiarly fearsome.

In those earlier days the full of the moon, her halves, and ever her quarters, lifted a load from the mind. The airship did not sneak about overhead when the Queen of Night showed her face. Now the position was reversed. There was no longer benignity in her expression and the soft effulgence of her rays was a treachery and a deceit. Moonlight meant raiding.

It was an agony more prolonged than the visitation of the Zeppelin, this night-flying by the Gotha and the Giant. When an airship raid was over it was done with. The bomb-rack was empty and thoughts of home preoccupied the crew. But with the aeroplane it was different. The droning, organ-like note of the multi-engined monsters might be heard in crescendo and in diminuendo throughout the night. They could cut and come again, inducing fear-wracked sleeplessness in London's millions until the first streaks of dawn.

Compared with their daytime forerunners the moonlight raids were not so deadly, bomb for bomb. But the strain on the nerves and heart of the populace was greater far, with who knows what weakening of the will to war.

The plan was prepared. The training necessary to overcome night blindness, to beget a proper sense of equilibrium, and to land in the dark without mishap had been accomplished. Weather conditions were fine and settled and the moon was at three-quarters of full.

The Gothas came by night for the first time on the 3rd-4th September, 1917. Four of them came, independently. No sort of success was scored at all except in Chatham, but there it was immense. It was cloudless with the moon riding high when, a little after eleven o'clock, one came over the town. The searchlight rays were absorbed in the general radiance and had little penetrative power. For a similar reason the sixteen pilots who went up saw nothing at all, and the guns could find no target. In the drill-hall of the Naval Barracks several hundred young bluejackets, recently recruited and about to join their ships, had slung hammocks and were sleeping. Two 100-pound bombs of the type nicknamed "Crashing Christopher" hit the drill-hall fair and square. Of those inside asleep 130 were killed and 88 wounded. This sort of

thing repeated, people said, would be the beginning of the end.

History was made that night notwithstanding, and the end had already begun for the Gothas and the Giants. It was made by three pilots, Murlis-Green, Brand and Banks, whose names should live. The squadron they belonged to was equipped with Sopwith Camels, which at last had come. It was a fast single-seater with a rotary engine, unstable and like lightning on its controls. Heretofore it had never entered anyone's head that such a machine should fly by night. Nevertheless, on the very night of the first moonlight raid these three officers sought and received permission to take up their Camels. They successfully performed a forty minutes' patrol, followed by three good landings. The news of this exploit spread far and wide and before long night-flying on fast single-seater machines such as the Camel, the S.E. 5 and the highly efficient Bristol Fighter, became the order of the night, and the enemy's bombers their legitimate prey.

On the following night London was attacked by three Gotha groups between 11 and 1 a.m., which killed 16 and injured 56. So light was it under the moon that the anti-aircraft gunners could train their weapons without the aid of searchlights, in some cases turning the raiders back to try another entrance over the City. The three Camel pilots flew again but they were not yet rewarded with success.

As may well be imagined, these two raids on successive nights, killing and wounding and inaugurating an entirely new form of attack caused an immense agitation, and new methods of defence were loudly demanded. The Press was particularly plain speaking. It referred to the old gang in office at the Hotel Cecil, now the headquarters of Shell-Mex and then the Department for the Air Service. It derided the official view

that raids could not be prevented, demanding an Air Defence Commander who could defend.

General Ashmore in his *Air Defence* relates how he was deluged with crazy suggestions. One advocated the flood-lighting of south-east England so that our pilots, flying above the raiders, could see them silhouetted below. Another suggested surcharging the atmosphere with carborundum powder which might get into the engines of the raiding machines and seize them up. To sprinkle down sulphuric acid from above, and to blow out poison gas from in front, were other mad ideas.

General Smuts, holding an official investigation into the matter, favoured blinding the raiders with a great increase of searchlights. He quoted also an Italian device for the protection of Venice by which aeroplanes were to be entrapped in a wire mesh suspended from balloons.

But Ashmore, who held the executive responsibility, put his faith in night-flying pilots and in carefully regulated zones of anti-aircraft barrage fire. Aeroplanes, he claimed, should have a searchlight service exclusive to themselves which would guide them to their quarry. With modification, he also adopted the balloon apron idea and his new schemes were well under way when the next raid took place, three weeks later, with the Harvest Moon in her first quarter.

It was the signal for a short, intensive period of bombing which will always be vivid in the memory of those who experienced it. There were six of these raids during the Harvest Moon period and they occurred, with a two-nights' break in the middle, on six consecutive dates.

The first of this series, 24th-25th September, killed 14 and injured 49, 20 per cent of the casualties being unfortunately caused by returning shell fragments. Many people were killed

CHRONICLE OF THE RAIDS, FOURTH PERIOD

and injured by a high explosive which fell in Southampton Row outside the Bedford Hotel. One Gotha was hit by a shell flying over the Thames and crashed on its own aerodrome, but our pilots were able on this occasion to do nothing.

The second of the series, the night after, killed 9 and injured 23, the same percentage of casualties as before being caused by anti-aircraft shell fragments. It is possible that one Gotha which failed to get back had been damaged in aerial combat previously and fell into the sea.

There followed two blank nights and then, during the full moon period, the raiding recurred on four successive nights. They were all of a pattern and will not be related in any detail. They accounted, mostly in London, for 39 killed and 167 injured. Of this total, 27 per cent was caused by the anti-aircraft barrage.

The raiders did not have it all their own way, though as yet the Home Defence pilots had not scored a decisive victory. Much of their aeroplane equipment was still inadequate for the service demanded of it. And yet there was a steady drain on the enemy's strength in multi-engined bombers. During these four successive nights of raiding, for instance, 12 Gothas had come to grief. Anti-aircraft fire brought 4 down; 7 crashed on their own aerodromes; and one made a forced landing in Holland.

The effect otherwise of the moonlighting up to date was a grievous loss of munition output from Woolwich and other factories in the affected areas, and a growing tendency on the part of large sections of the public to give way to panic *en masse*.

To counteract the latter evil, which might end by destroying the national morale, the Prime Minister requested editors to cease description and illustration of the raiding results. To

offset in general the Gotha activities it was at last decided, on the principle of "tit for tat," that the Rhineland cities and more important towns within reach should be bombed by aeroplanes detached from the fighting front in France.

The moonlight campaign was also intensified during the Harvest Moon burst of activity by the first appearance of the Giant bomber, a super-Gotha as it might be called.

This monster machine, although it would now resemble an archaeopteryx, or a flying wire entanglement, in our modern eye for streamlining effect, was a most potent instrument of war. It had four, or five, 260-horse-power engines and a span of 130 feet. It could accommodate a crew of eight or ten. It had tank capacity for five hours in the air and a carrying capacity of from one to two tons. After an attack, lighter for the bombs dropped and the fuel consumed, it could climb to 20,000 feet and regain its own territory with a minimum possibility of interference. Its bulk and weight in flight afforded a steady platform for machine-gun fire and it was armed for all-round defence.

Once again, it seemed, the enemy's inventive genius had put him on top of the tide. This last phase of the War over England ended, as did the preceding three, with the attack eventually succumbing to the defence. But it was a tough nut to crack.

After the Harvest comes the Hunter's Moon, a month later, and so, towards the end of October, when it would be at full, a repetition of intensive night raiding was anticipated by the Commander of the Air Defence. The weather, however, turned out not wholly favourable, and, although three attacks took place, only the third could be accounted in any way successful. Ten people were killed and 22 injured, and again our own anti-aircraft fire accounted for 20 per cent. Five of the raiding machines were wrecked on landing.

CHRONICLE OF THE RAIDS, FOURTH PERIOD

November was a blank month, but during December Gothas and Giants in conjunction raided thrice, on the 6th, 18th and 22nd of the month.

In the first of this short series the enemy experimented on a large scale with incendiary bombs, 90 per cent of those dropped being of that variety. But the material employed was by no means perfect and the result proved most disappointing to the enemy. Fire points were not observable starting up all over London and the complaints were bitter on return. This particular raid caused 18 casualties in London; shell fragments on this occasion accounted for 9, or 50 per cent.

Otherwise, the guns of the defence scored a notable success. Two Gothas were brought down in Kent; a second was crippled and must have been lost at sea; two more made forced landings in Belgium for a similar reason; and a sixth crashed on its own aerodrome. Already the night game was becoming expensive and, as yet, the aeroplane defence had not taken hold firmly.

The second December raid was quite unexpected because it was a time of new moon. But snow covered the ground and the black ribbon band of the Thames, snaking across a white surface, was a surer sign-post to London than ever the rays of the moon. Fourteen people were killed and 83 injured, and again the barrage fire accounted for 20 per cent of the casualties. A 660-pound bomb fell in a side street off Eaton Square and another, a smaller one, in the gardens of Buckingham Palace.

The enemy losses were not light. One bomber was destroyed by anti-aircraft fire; two others took fire on landing and were burnt out; four more were severely damaged on landing. One other, the eighth, was shot down into the sea off Folkestone by Murliss-Green, one of the pioneers of Camel flight by night,

in aerial combat. The tide had more than turned. It was now racing in.

Since the commencement of moonlighting in the air the phases of the moon had been sufficient natural warning to the people to be wary of raids. But this attack had been brought off with the moon only five days old. Londoners, quite naturally, having only slush underfoot, forgot about the snow and were unthinkingly abroad. Hence the high toll of life and limb which the raiders took.

Thereafter, to avoid a recurrence of surprise attack, the maroon system of warning was instituted. At first it was ordained that these explosive fireworks should not sound after 11 p.m. in deference to invalids, the aged and the feeble. But the new system of warning soon proved its value and under pressure from local authorities it was permitted throughout the night.

The third December raid, which was also the last in 1917, was the work of a Gotha and two Giants. It effected nothing. The Gotha landed in a field by Margate with engine trouble. It was fired by its crew, who thereupon surrendered to the police.

And now the tale is nearly done. Six more raids remain to be recorded; two in January, 1918; two in February; one in March; and the final in May. Except on the first and last occasions Giants were exclusively employed, and London, as before, was unfailingly the main objective.

Three Gothas and a Giant came over on the night 28th-29th January. The casualty bill was heavy and was caused mostly by the Giant. It amounted to 67 killed and 166 injured. A good half of the victims were people taking shelter in the basement of Odham's Printing Works in Long Acre. A 660-pound bomb crashed through the pavement light and the full

force of the explosion was thus directed inwards. Twenty-eight people in another part of London, mostly women and children, were killed and injured, not by bombs but in a panic rush for cover. They mistook the warning maroons for bomb explosions and were crushed in a stampede for air-raid shelter in the railway stations of Bishopsgate and Mile End.

Twice the Giant was attacked by aeroplanes but without success. Bearing a charmed life it even flew undamaged through the Chingford balloon apron, carrying away two of the wire streamers with it home. The enemy, however, by no means escaped scot free. Two Home Defence pilots intercepted one of the Gothas which had been busy over Hampstead and brought it down in flames near Billericay, place of ill-omen for the raiders.

On the next night, three Giants made an attempt on London. One was turned back by outer-zone barrage fire over Essex. A second was so persistently attacked by pilots on air-raid patrol that it dropped its bombs harmlessly and fled. The third was also attacked by a B.E. 12 over Kew and Brentford. Hurriedly dropping its bombs, which unfortunately killed and injured 20 people, it climbed and eluded further pursuit. The aircraft menace to the bomber had now fully arrived.

On 16th-17th February five Giants set out and two reached London. A single bomb weighing a ton hit Chelsea Hospital, killing an officer of the staff, his wife, her sister, and their two children. One of the Giants killed seven persons and injured two in Woolwich arsenal.

A single Giant came in the following night, claiming 21 killed and 32 injured. These casualties nearly all occurred at St. Pancras Station where a railway arch, used as a shelter, received the full impact of an explosion.

Sixty-nine pilots were at one time or another in pursuit but

only one of them came into action. Unfortunately, after firing half a belt of ammunition, his own gun flashes blinded him for the time being and the Giant got away. On other occasions our pilots had been robbed of victory in the same way and the flash-eliminator, now produced to counteract the nuisance, had been long overdue.

The penultimate air raid of the War took place on the night 7th-8th March. Five Giants came in on a path north and south of the Thames estuary and three of them arrived over London. The night was moonless but an aurora borealis made it light enough for the enemy to fly. The bombs were probably dropped without much discrimination, but in spite of that 23 people were killed and 39 injured. Of this casualty roll more than half was caused by another 1-ton bomb which obliterated four large houses in Warrington Crescent, Maida Vale, demolished 23 others and damaged, more or less seriously, 400 besides. Our pilots saw nothing.

After this effort we enjoyed an air-raid holiday lasting for two and a half months. The battle-storm of March, 1918, broke in France on the Fifth Army front a fortnight later. The enemy's enormous initial successes in that stupendous onslaught made things look so roseate for the Central Powers that raiding, even as a side-show, was not considered to be worth the candle. The Gothas and the Giants, besides, could be and were more gainfully employed in bombing beaten armies to a stand-still than in the precarious duty of attacking a city so well defended as London.

But when, in the latter half of May, the strength of the attack was spent and the backwash of the retreat began to harden the Allied resistance, then the High Command bethought themselves again and planned a crushing endeavour.

The result was an aerial armada of 32 Gothas and 3 Giants

CHRONICLE OF THE RAIDS, FOURTH PERIOD

which attacked London for three consecutive hours on the night 19th-20th May. It was the last raid of all. For the attack it was a distinct success, 226 persons being killed and injured. For the defence, in a different computation, it was a bigger success still. Three of the raiders were destroyed in aerial combat; three by anti-aircraft fire; one forced-landed through engine failure; and three more, damaged by our shells, completely crashed on their home aerodrome.

The Air Defence Commander had taken advantage of the raiding holiday to reorganize the defences. Aeroplane patrol zones were delimited so that they could work freely in one part of the sky while the barrage fire stirred the air in another. To bring this about there was a wholesale clearance of guns from the inner barrage belt, but the searchlights were left behind for the sole guidance of our pilots in directing them to the attack.

More than 30,000 shells were fired that night. Eighty-four pilots went up, each flying a machine capable of the requisite performance, and the atmosphere of the cubic area which was the field of combat must indeed have been disturbed by the going and coming at express speed of so many machines. The Whitsunday night of that last year of the War ought long to be remembered.

Losses such as this could not be withstood. The raids ceased from then on. It was declared in August by the German High Command that, on both military and political grounds, they no longer subserved a useful purpose. We had worried through.

IV

A summary of the fourth, concluding phase is as follows. There were 20 night raids by giant aeroplanes. Two hundred

and forty-nine bombing aircraft started out, of which 30 were Giants. Two hundred and twenty-five came over, of which 28 were Giants. Fifty tons of bombs were dropped, representing 1,943 bombs. £1,000,000 worth of material damage was done. Seven hundred and sixty-seven Home Defence pilots rose to the attack. Three were killed. Of the general populace, 435 were killed and 980 injured. Ten enemy bombers were brought down by A. A. fire and five were destroyed in air combat.

A comparison with the daylight raids shows the superiority of that form of attack. Twenty tons of bombs dropped by day caused about the same number of casualties as 50 dropped by night. The daylight method was therefore two and a half times as effective.

CHAPTER SEVEN

“ARMA VIRUMQUE”

I

IT will be asked what was the real reason of the raids. What impelled the enemy to put forth this gigantic effort, absorbing vast quantities of men and material and equivalently reducing the energy employable on the many fronts which ringed him round? Obviously he hoped to inflict great loss and damage, and cripple as far as possible our own efforts by bombing targets of essential military importance. Obviously also, when indiscriminate bombing began so soon after the commencement, making civilians, men, women and children, the chief sufferers, he was attempting to break our will to war.

But the High Command was far too astute not early to realize the unlikelihood of obtaining decisive results in either of these two ways. The French seat of government had been bodily removed south to Bordeaux when Paris was threatened by the German advance in the early stages of the War. The enemy had that example before their eyes and must have known that we could do likewise, at whatever cost, should London have been made uninhabitable.

If the seat of government of a nation remains functionable and intact the will to war is not easily broken. In this instance, although people became dispirited under the continuous strain of the raids, and war-weary to an unrealized degree, there was never a thought or a word spoken of bringing pressure to

bear to end the War. We are not a people of revolutionary tendencies; we are not apt to upset our institutions and respond to demagogic clamour. We have within us a more deeply planted instinct for law and order than any other people on earth, and an ingrained habit of obedience to the powers that rule. All this the Germans, renowned for their study of psychology, must have known. And yet they persisted!

To the individual who suffered, or witnessed suffering, or who experienced its effects, each occasion of a bomb explosion was a colossal calamity, embracing his whole world and absorbing his whole ego. But in the aggregate the visible result was mild and seldom of national importance.

Directly and indirectly a round total of 5,000 persons were killed and injured in all the raids combined. Road accidents in a week account for as many. An estimated three million pounds of damage was done. The assets of any ordinary Insurance Company amount to five or ten times as much.

In this comparison it may be mentioned that the Government, early in the War, undertook the insurance of property against air raids, charging a sixth per cent. Later, urged thereto by certain business magnates, the Lord Mayor of London headed a deputation calling on the Government, instead, to agree to universal indemnity with retrospective effect. But the Government held to the original system and the Mayoral proposal was rejected. At the end of the War a profit was realized on insurance transactions of eleven million pounds.

And yet, knowing the meagreness of the results they obtained over long-drawn periods, and well able to assess the effect on the will to war, the enemy almost to the bitter end persisted. Why?

The answer is probably to be found in the fervent faith which the German public had been encouraged to feel in the almighty

power of the Zeppelin as a weapon of war. It was the inventiveness of German brains which had produced it and the national bosom glowed with pride at the accomplishment. The populace held the most exaggerated ideas as to its power of destruction. England was the most hated of those in arms against the Reich because her wanton interference had prevented the foe of foes from being swallowed at a mouthful. Unleash the Zeppelins, they clamoured, and reduce the land of this perfidious enemy to a heap of smouldering ruins. Let his capital be razed by fire.

Paris was a different proposition altogether. The quarrel between France and Germany was at least open and above-board and the hate between them was without bitterness. Moreover, and this is important, the alignment of the opposing army groups, from the coast to the Swiss frontier, provided Paris with a natural and economical air-raid defence.

But England, in the eyes of Germany, had sneaked into the arena of war at the last minute in an underhand manner and must pay for treachery. Throughout the War Paris underwent only two airship raids, each time by a single Zeppelin. The total result was 25 people killed and 32 injured.

Such was the feeling abroad in Germany. “Make England pay” was the cry, loud enough to exert pressure in high places and particularly gratifying to the Army and Navy Airship Services who were little likely to disclaim the mightiness thus credited to the novel weapon in their hands.

War bitterness increased with the sight of their returning wounded, and the German public was further incited to demand reprisals on England, so safe and snug across the Channel. Excuses were manufactured to extenuate the seeming barbarity of the proposal. Had not the open town of Freiburg, well within German territory, been bombed by British aero-

planes in December, 1914? Did not the inhuman food blockade justify reprisal in any shape or form?

In anticipation of permission to bomb England the Service leaders laid their plans, but the Kaiser was a stumbling-block and hard to move at that. Reluctantly, he gave a limited consent, stipulating that Buckingham Palace, Westminster Abbey, St. Paul's, and all purely residential areas, were to be considered out of bounds. Bomb loads, he insisted, were to be brought back intact rather than that objectives of non-military importance should be struck. Later still, when it was represented to him that these restrictions would hamper the efforts of the airship commanders, he consented to the City being bombed, but urged that it should be done at week-ends only when, presumably, the normal population would be greatly reduced.

The Kaiser's careful exclusion of Buckingham Palace as a bombing objective was typical of the man. He seemed to consider that action against royalty, even though arrayed against him, was derogatory to his own kingdom. It was a matter of general understanding among German pilots that they should give wide berth to King Albert's headquarters or to the reported locality of the King of England when he visited the French front.

Step by step, but always grudgingly, the Kaiser gave way to the pressure which his naval and military chiefs exerted on him that the bombing war on England should be *à toute outrance*, and at last every restriction was removed. The Bank of England was especially listed as a target of prime importance. Germany considered that to lay out the Old Lady of Threadneedle Street would be to derange the entire monetary system of the Empire.

And yet, although to all appearance the issues were plain

and the air raid policy a cherished project, there was enough doubt over the ethics of it to cause a self-justification campaign from time to time in the German press. Not everyone was so frank in his admission as a certain captured German airman who stated that the whole object was death and destruction on a large scale quite regardless of the purely military results so gained.

It was claimed that the raids were necessary for bolstering the morale of the airship personnel, which might otherwise have languished, and equally in order to depress that of the Allies. Berlin and provincial papers were replete with accounts of the wholesale demolition of our public buildings and of the perpetual state of terrorization in which we existed. The raids, it was claimed, weakened our sense of insularity and at the same time demonstrated to us the courage, determination and inventive genius of the enemy we confronted. Raiding over England, they said, doubtless engendered hate but it also compelled esteem.

They were right about the display of courage. The Zeppelin crews may have been engaged in murderous work, but they exhibited in the process of carrying it out a scorn of danger which would otherwise deserve to rank high in the annals of human bravery. From our pilots, who flew with such intrepidity against them, the raiders did indeed compel esteem as from brave men to others. When the bodies of the men brought down in the L. 48, in June, 1917, were laid to rest in a common grave, this inscription was placed over it by the Royal Flying Corps: "Who art thou that judgest another man's servant. To his own master he standeth or falleth." And when a woman threw an egg which bespattered the coffins of the Cuffley victims on their way to burial she outraged the feelings of the bystanders who were not slow to remonstrate nor smooth in their speech.

In their own eyes, it must be remembered, the raiders were helping their side in the face of risks and dangers which, from that special point of view, made of the Service to which they belonged a school for heroes. Before each member of an airship crew the prospect stared of being shot down in flames with the added agony of being burnt to death while plunging earthwards. Many of them had witnessed the appalling sight from neighbouring airships, and had shuddered at the awful fate which befell their comrades. Phials of poison were issuable on request as a safeguard against the torture of being consumed by fire.

A few outstanding examples of what these men at times endured in the course of their lamentable duty will not, perhaps, be out of place in this record.

II

A freak escape was a rare event when an airship was set afire. Seldom were there any survivors. The preservation of Helmsman Muhler from the burning of the L.Z. 37 has an element of the miraculous about it.

This military Zeppelin was returning from a raid on Calais in the early morning of 7th June, 1915, when it was overtaken by Flight Sub-Lieutenant Warneford and brought down in flames near Ostend. It was the first air victory of the War and created an immense sensation.

During the blazing descent, the car in which Muhler was stationed tore loose and fell plumb. It hurtled down on to the roof of a convent, plunging through to a room beneath. It was a convent bedroom and the bed had only just been vacated by a nun who was on her way to say "matins." As the nose

of the gondola struck the floor with a terrific impact Muhler was hurled free to land fairly and squarely on the bed and, though seriously injured, to live to tell the tale.

Wonder was often expressed during operations that the observation car, invented by Oberleutnant Lehmann to be suspended from an airship by a 3,000 foot cable, was not more widely used. It might have solved the difficult navigational problems. Perhaps the experience of Kapitan Peter Strasser, Chief of Naval Airships, when testing its utility, created a prejudice against it.

While he was being lowered the canoe-shaped device got caught up in the wireless aerial and upended. The man at the winch, meanwhile, unaware of what had happened, continued to pay out. Before long the strain on the aerial became too great. It snapped asunder and the car, with Strasser struggling hard not to be thrown out, fell sheer until brought up with a sickening jolt when the limit of the cable slack had been reached.

Perhaps the most fearful, and at the same time awe-inspiring, incident ever experienced by a Zeppelin crew which did not end disastrously was that of an electric storm which enveloped the L. 11, under the command of Oberleutnant Freiherr von Buttlar, on her way home from a raid.

The radio quickly went out of action. Rain fell in torrents and both forked and sheet lightning played incessantly all around. A thunderbolt narrowly missed the tossed Zeppelin which was all the time electrically charged. The machine-guns spitted sparks at the muzzle and the duralumin framework sprayed electricity. Wires and cables glowed with a violet-blue radiance and even the finger tips of the men emitted

sparks. In the crow's nest on top of the outer envelope the machine-gunner and look-out man had the remarkable experience of being illuminated and enwrapped with St. Elmo's Fire as the electricity was slowly discharged to earth from the surrounding atmosphere, and all the time there was the dread lest leaking gas might engulf them all in flames.

The L. 11 weathered this extraordinary experience and eventually reached her shed flying low just above the trees.

The incident of the L. 19 and the skipper of the trawler *King Stephen* is a story with a different ending.

It was the night of the Midland raid on the 31st January-1st February, 1916, when nine airships tried to reach and bomb Liverpool, and it will be remembered that bad weather conditions necessitated a modification of the plan. The L. 19 circled Birmingham and then passed out to sea over Yarmouth at 6.30 in the morning, the last to leave.

Engine trouble developed soon after. She drifted over the Dutch islands at a low height and when fired on as an infringer of neutrality disappeared in a northerly direction. For several days her fate was a mystery.

In due course a fishing-trawler, the *King Stephen*, arrived back home at her port of Grimsby from the North Sea fishing-ground where she had been in prohibited waters. The skipper reported that early in the morning of 2nd February he had steamed within hail of an airship on the water in a sinking condition about 120 miles east of Spurn Head in Yorkshire. A group of men were assembled in a makeshift refuge on top of the envelope, while others, from the sound of hammering which came from inside, were evidently trying to stop leakages. The officer in command had requested to be taken off with his men. But this the skipper of the trawler had refused,

“ARMA VIRUMQUE”

fearing that his small crew would be overpowered, and his ship seized, by so many coming on board. The Germans swore to the contrary but he had not cared to trust an enemy's word. Saying, therefore, that he would report their plight to the first patrol boat he met he steamed away from the wrecked airmen.

Twenty-four hours later, before help came, the wreck and all on board had sunk beneath the waves. Some months later a bottle was washed up on the Norwegian coast containing a last message from Kapitanleutnant Loewe, the commander of the L. 19:

“With 15 men on platform of L. 19. Longitude 3 degrees E. The envelope is floating without any car. Am trying to send the last report. We had three engine breakdowns. A very high headwind on the homeward flight hampered progress and drove us in the fog over Holland where we came under rifle fire. Three engines failed simultaneously. Our position became increasingly difficult. Now, about 1 o'clock in the afternoon, our last hour is approaching. Loewe.”

Whether or not the skipper of the *King Stephen* was justified in his refusal to take the crew on board is a matter best left to individual judgment. The excuse he gave was certainly plausible. It remains to be told that later his ship was captured by the enemy and that he denied the charge of inhumanity when accused of it. He and his men were treated in the ordinary way as prisoners of war and reprisal for his conduct was not taken.

Kapitanleutnant Hollender has written an account of his first air raid over England. It was the one in which two airships were destroyed by Home Defence pilots, thus marking

the final ascendancy of the aeroplane as the airship's natural foe. Hollender supplies a graphic description, the substance of which is as follows.

At noon on 27th November, 1916, three Zeppelin commanders, Frankenberg of the L. 21, Max Dietrich of the L. 34, and Hollender himself of the L. 22, sat in the officers' canteen of the Nordholz airship base celebrating a birthday. It was that of Dietrich and being the guest of honour his chair was decorated with fir-tree boughs. The weather had been bad of late and the prospect of being ordered on a raid was small. Frankenberg and Dietrich had not been out since the disastrous occasion on the night 1st-2nd October, a month ago, when their comrade Mathy had met his end in the L. 31, and they were eager to avenge him.

All of a sudden the station adjutant interrupted the celebrations by rushing in, waving a paper in the air, and shouting gleefully that the weather had changed for the better, that raid conditions were splendid, and that orders had come for all three Zeppelins to be up by 1 o'clock at latest for a raid over the English Midlands. At Frankenberg's suggestion the birthday table was left as it was so that they might continue the feast on their return.

All was bustle and Hollender saw pleasure written on the faces of his men at the exciting prospect of their first raid. The air rendezvous was over Heligoland and there, in a cloudless sky, the three Nordholz airships were joined by seven others for the great enterprise. They looked to their proud commanders like gigantic, grey birds of prey as they flew magnificently over the waters of the North Sea, set on a course for Flamborough Head.

Darkness arrived as they wended a leisurely way so as not to arrive too soon. Hollender could only see Frankenberg's

L. 21 right ahead of him. He climbed above the vaporous air to 7,000 feet and emerged into starlit space. The aurora borealis shimmered in the northern sky and threw up great pencils of light, making the horizon in that quarter as bright as day.

Cloudbanks were now ahead and suddenly a companion airship bore down on him a few hundred yards away. As quickly it disappeared again, like a ghostly apparition. He ran into thick mist and his instrument registered 16 degrees of frost. At 10.15 the sickle moon went down, sharply outlining as it did so the coast of Yorkshire close ahead.

Southwards, a little later, a shaft of flame below told him that one of his friends was already at work and soon he saw a companion Zeppelin shining in the searchlight beam. Hollender's men were noisily appreciative of the fire which had been started on the ground, realizing that it would be their turn any minute now.

And then, to the north, a crimson ball of fire suddenly appeared in the sky. It glowed intensely, showing skeleton framework black against the flames, and was recognized to be one of the raiding fleet falling swiftly down. Hollender wondered which it might be.

At 1.30 he felt satisfied with his own results and turned for home. But before he had been long over the water his pilot announces that they are rapidly losing height and that nothing could be done. The gas cells had been riddled with shrapnel and shell splinters and the hydrogen was pouring out. The airship was brought down to 2,000 feet to ease the internal pressure and enable the engines to give more revolutions. Everything superfluous was thrown out, the machine-guns, the water ballast, and even all the petrol which was not a bare necessity.

The crew did not share their commander's anxiety and

seemed unappreciative of the jeopardy in which they were. They had at last taken part in an air raid on England and were wound up to too high a pitch of enthusiasm to feel care. Finally Hollender housed his airship in a strange shed in East Friesland with less than half an hour's supply of fuel in the tanks. There he learnt that the doomed Zeppelin he had seen burn was Frankenberg's L. 21. Later in the day, as reports came to hand, he further learnt that another member of the birthday party, Max Dietrich himself, in whose honour they were celebrating, had met a similar fate. The table had been uselessly left furnished, and the feast could not continue. The birthday had become a day of death.

Mention has already been made in more than one place of the "Silent Raid" of 19th-20th October, 1917. It will be remembered that the aeroplane by then had become a deadly menace to the airship and that, in consequence, new types had been evolved which could fly fast at 20,000 feet and over. At this tremendous height the armada of eleven airships was caught in the fury of a gale and only the more experienced commanders succeeded in evading disaster. As it was four Zeppelins came to grief that night, one of them finally being blown out over the Mediterranean and lost to sight. This was the L. 50, the adventures of which will be recounted because the recital is a saga of the air.

One of her engines had failed on the way from her base and another broke down over Norfolk. They seized immediately in the intense cold of the upper regions and could not be re-started. The L. 50 had thus lost a third of her horse-power and was in no condition to fly out a storm. All she could do was to bend the best course possible for the nearest German soil. In this endeavour, during the long south-easterly voyage,

she did actually at one time cross the front line on to her own side near Valenciennes. But she had no idea of it at the time and continued to be the plaything of the wind.

Flying along fifty miles east of Paris, intent only on easterly direction as far as she could control her course, she neared the Swiss frontier. By now the crew had been twenty-four hours in the air and ten of them at high altitude necessitating the use of oxygen. Even with the aid of oxygen the appalling cold and the prolonged nerve strain had reduced many of them to a state of utter helplessness. When the mechanics in the motor gondolas had exhausted their oxygen supply they just lay down and let the engines rattle on. Those who took turns at the steering-wheel had barely strength to move it, so intense was their weariness and weakness. A reserve supply of oxygen was remembered to be at hand in the centre corridor, but no one had the energy to climb the ladder and recover it. They were too exhausted to move, much less eat. Cruising thus helplessly in the frozen void the engines still in commission were turning over unattended at speeds which had been ordered from the control-car six or more hours before.

At midday Schwonder, the L. 50's commander, saw a sister airship on the ground below and thinking, no doubt, that this must signify that he was at last over home territory, he attempted in sheer desperation to land alongside. As a matter of fact he saw the L. 49 which had been forced down by the threat of attack by French "Nieuport" pilots north of Dijon and had been captured whole.

Schwonder failed in his attempt to land. The mechanics were all either unconscious or dead and so he could not manoeuvre for a landing. But he could cause her to lose height and did so by actuating the valve. The result of this was, however, that she steered head on into a hill-top at Dommartin ten miles further

south. The impact knocked away the forward control-car and the rear engine gondola, the occupants of which either jumped for safety or fell with them, all more or less seriously injured. A few of the crew also saved themselves by jumping from the side gondolas. But the remainder, four in all, were taken aloft when the L. 50, thus lightened of the greater part of her load, rebounded. She soared and became the sport of the winds, carried along in a due southerly direction over the Mediterranean Sea. She was pursued by French sea-plane pilots until nightfall, and when they turned back she was still careering southwards. No further trace of the ill-fated L. 50 was found and it is presumed that she was eventually engulfed.

CHAPTER EIGHT

“VAE VICTIS”

I

THE intention of this chapter is to pay tribute to the pilots of the home defence, for to them we chiefly owe it that each successive phase of the attack was finally foiled.

Between 1914 and 1918, when war for the first time scaled the heavens, fighting in the air was invested with a peculiar glamour in the eyes of those on the ground. The expression “cavalry of the skies” was coined by Mr. Lloyd George in a Parliamentary speech wherein he lauded the bravery of the pilots fighting over the front. Even to those engaged, the pilots themselves, there was an element of chivalry in their mutual regard. Their actions partook of single-handed encounter when war was clean, and they never thought harshly of each other. Born of the element in which they fought and the manner in which they died a *camaraderie* existed between the two which sometimes found expression in permitted courtesies. News would be interchanged regarding the death or capture of pilots brought down the losers in air combat, and burial with military honours was sometimes accorded to the slain. Chivalry was not dead among flying-men, murdered by the modern machine of war as developed on the ground. And that was in France where battle raged endlessly and where the air became legitimately an extension of the arena of war.

On the Home front the circumstances were different. Long

spells of inactivity and suspense were succeeded by nights of fearful risk, sometimes quite hopelessly run. The keying-up and keying-down of hardihood and resolution which the circumstances required demanded, perhaps, even a greater nervous effort than was exacted by the more level conditions of service in France. Courage in loneliness was required more especially for the night-flying against the raider, often carried out in weather which constituted a dangerous risk in itself. The landing risks alone, after an exhausting patrol, were considerable, and they were only reduced, not eliminated altogether, when training became effective and the system of ground lighting was improved. The long roll of casualties resulting therefrom will tell the tale. They were of unexcelled gallantry, the pilots and observers of the Home Defence, and their deeds should live after them.

The greater part of those who defended the air over England against the raider go unnamed, because in spite of all their efforts they did not obtain a signal success. Of the many score, for instance, who tried on innumerable occasions to find, attack and then destroy the Zeppelins, only seven actually succeeded. Nevertheless, an account of how they did it on these successful occasions will embrace also the deeds of those who failed in the trying. In failure or in success the pilots were all of a kidney.

Their own written reports of each of these great occasions form the groundwork of the accounts which follow.

II

There was a light westerly wind, with a good deal of cloud about and some mist on the ground, on the night of the 2nd-3rd September, 1916, when Leefe Robinson brought down the wooden airship S.L. 11 at Cuffley, north of London.

Flying a B.E. 2c, he left his aerodrome shortly after 11 p.m. and had climbed to 10,000 feet by midnight. More than an hour passed on patrol at this height before he detected a Zeppelin some distance off, held unsteadily in two searchlight beams. He made at once in that direction, still climbing, and when nearly at 13,000 feet he found himself well above the place where it ought to have been. But it had passed into a cloud area and was lost both to him and to the searchlights.

Another hour went by on patrol at the height he had now reached, and a little after 2 a.m., three hours since he had left the ground, he saw the same, or another, airship over north-east London illuminated as before. He could see anti-aircraft shells bursting above it and below it.

Sacrificing his height for the greater advantage of speed, and neglecting the risk of being hit and brought down by anti-aircraft shells, Leeffe Robinson put the nose of his machine down and made for the Zeppelin. He arrived below it at about 800 feet, and raked its full underneath length with a whole drum of explosive bullets. There was no effect. Thereupon he changed his position relative to the enemy and distributed a second drum alongside the airship's flank. Again there was no effect.

Utterly determined, he next manœuvred to get on the enemy's tail and concentrated a third drum on a single spot at the very after point of the huge thing. This time there was result. The spot began to glow incandescently and soon the airship's after part was ablaze. Leeffe Robinson had to manœuvre quickly to get out of the way of the falling, blazing mass, and in the excitement of success he joyfully fired off coloured Very Lights, dropped a parachute flare and looped the loop.

With his tank almost dry he landed on his own aerodrome

again after having been over three hours and a half in the air. During the combat he had shot away his machine-gun guard, part of his aeroplane's centre section, and his bullets had many times pierced the top main spar.

Second-Lieutenant F. Sowrey scored his victory over the L. 32, which fell in flames near Billericay, on the night 23rd-24th September, 1916, three weeks later.

He left his aerodrome by Sutton's Farm at 11.30 p.m. to fly his routine patrol line between that place and Joyce Green on the Thames near Purfleet. The night was fine, with light winds and a few thin clouds at 3,000 feet.

Soon after midnight, when he was at 8,000 feet, he saw an airship in the direction of Woolwich caught in searchlight rays. Climbing hard he made in that direction, but before he reached the locality the airship had shaken free of the lights and was lost to view.

Thirty-five minutes later, at a quarter to one o'clock, being then at 13,000 feet, Sowrey saw a second airship in the same easterly quarter gleaming in the searchlight rays, and at once manœuvred for a position underneath. He succeeded in getting so close that he could see the propellers revolving as the Zeppelin twisted and turned to elude the lights below. He opened fire.

The first two drums of ammunition had no apparent effect, but the third, loaded also with explosive and tracer bullets, brought immediate results. The outer skin of the Zeppelin caught fire in several places along the underneath part and soon it was a ball of fire. Sowrey then drew off and watched the plunging descent until the blazing mass struck the ground, a spectacle which was also observed by the crew of a British submarine sixty miles away in the Straits of Dover.

“VAE VICTIS”

He then landed back on his own flare-lit aerodrome two hours and ten minutes after first going on patrol.

The L. 31, with the redoubtable Mathy on board, fell to Second-Lieutenant W. J. Tempest at Potter's Bar on the Great North Road, the night 1st-2nd October, a week later.

It was a bitterly cold night with a heavy ground mist, but the sky was clear and starlit. Tempest was on his patrol line at 14,500 feet, just before midnight, when he noticed all the searchlights in the north-eastern district of London to be concentrating their beams. It was like a towering pyramid with illuminated outline. Balanced at the apex was a small cigar-shaped object, seemingly about fifteen miles away, and travelling in this illuminated manner towards the heart of the City.

Many times already Tempest had been cheated by pursuing Zeppelin-shaped cloudlets, but this time there could be no mistake and he flew to meet it from the opposite point of the compass. Flying thus at top speed, 15,000 feet high, through an inferno of bursting shells he quickly approached, judging the Zeppelin to be well below him at about 11,500 feet.

And then, as luck would have it, his mechanical pressure pump gave out. He was forced thereafter to keep up tank pressure, without which his engine would have been starved of fuel, by using the hand pump. Not only was the continual pumping an exhausting process in the rarified air but it also left him with only one hand free for piloting his machine and firing his gun.

Meanwhile his presence had been noticed from the airship, which turned away north and was soon at his own level. Following the Zeppelin's flight he now found, to his intense relief that he was at last free from danger on account of the

anti-aircraft fire. Knowing the airship's ability to climb, and determined that this one should not escape in that way, Tempest pumped extra hard for a bit and then dived straight at the enemy, firing as he came.

He passed underneath, banked over, and flew close alongside, almost sitting under the tail. Tracer bullets came at him but he was too close up for concentrated fire.

Continuing these tactics and firing hard the whole time, he suddenly noticed that the airship had begun to glow inside like an enormous Chinese lantern. A flame shot out of the front part and only then did he realize that he had set it on fire. It shot up in the air, balloon-wise, for about 200 feet, paused palpably for a split second, and then came roaring straight at him, a mass of flames.

In fearful expectation of being himself enwrapped in the flames he nose-dived and managed to corkscrew out of harm's way just as the burning wreckage, at blow-pipe heat, tore past with the roar of a draught furnace. Righting his B.E. 2c, Tempest watched his victim hit the ground, nearly three miles below, and emit a shower of sparks as it did so. He fired off all the green Very Lights he had with him in celebration of his victory and then, calmly consulting his watch, saw it was a little after midnight. Reaction then took him and he became sick and giddy, and felt utterly exhausted. On that account he marred his landing, rendered difficult in any case by the ground mist, and cut his head against the handle of his Lewis gun.

A double victory was scored two months later, on the night 17th-18th November, 1916, when Yorkshire and Durham were raided. The L. 34 fell to Second-Lieutenant I. V. Pyott, and the L. 21 to Flight Sub-Lieutenant E. L. Pulling.

When Pyott saw the L. 34 in a searchlight beam, coming

innocently towards him from the direction of Sunderland, he was himself at 10,000 feet and the airship a few hundred feet below that height. He had left his aerodrome at Seaton Carew near Hartlepool an hour ago in search of raiders.

He immediately attacked, flying underneath the Zeppelin amidships at right-angles and firing hard. The airship turned swiftly out to sea as soon as his presence became known and Pyott followed in pursuit, flying a parallel course and interchanging shots all the time.

Constantly aiming at a point on the larboard quarter of the Zeppelin he saw eventually a small patch become incandescent exactly where his tracers were penetrating. At first he thought it must be the return fire from a machine-gun which caused the glow, but the patch spread rapidly and in an instant the whole airship was gripped by flames. It fell into the sea off the mouth of the Tees and was still burning on the water when Pyott made a midnight landing on his aerodrome.

Another pilot who was over Melton Mowbray at the time, a hundred and thirty-six miles away, saw the sight.

The L. 21, brought down in flames by Flight Sub-Lieutenant Pulling on the same night, had come in south of Scarborough and boldly flew as far westward as Stoke-on-Trent. Thence, via Peterborough, it made to go out over Yarmouth.

The airship had been much harried. It had eluded two attacking aeroplanes over Peterborough about 2 a.m., and another west of Norwich. The latter had been an accidental encounter, the pilot having caught sight momentarily of a light which the airship carelessly showed. Unfortunately his engine failed just as he was about to open fire within good striking distance. The L. 21 opened up her engines and made eastwards at full speed, only to run into final disaster.

It was just after six o'clock in a grey dawn when three naval pilots on patrol from Yarmouth, Cadbury, Fane and Pulling, got on the airship's track.

Cadbury attacked first, putting four drums of ammunition into the Zeppelin from underneath at a distance of 700 feet. But nothing happened, and so Fane took up the fight. He opened fire at 100 feet only to jam at once owing to the freezing of his gun oil.

Pulling, who had been a spectator of the two attacks, now approached to within 50 feet, being himself under a hot fire from the airship, and had put in only two rounds when his gun jammed. But the two rounds had done the trick. The L. 21 took alight and was soon a fiery furnace, the crew continuing to pour in machine-gun fire at the pilot who had doomed them to destruction until they were consumed by the flames. The L. 21 fell into the sea eight miles off Lowestoft, and soon only an oily patch on the water bore evidence of her tragedy.

The next Zeppelin victory belonged to Lieutenant L. P. Watkins of the Canadian Army, who brought down the L. 48 near Dunwich on the Suffolk coast on the night 16th-17th June, 1917, seven months later.

It was a night so exceptionally clear that the airship, even though flying at 16,000 feet, could be seen from the ground. Watkins was flying a B.E. 12, a fast single-seater with a synchronized Vickers' gun firing through the propeller straight ahead and a Lewis gun firing over the top plane.

Leaving his aerodrome at 2 a.m. he climbed to 8,000 feet and struck off towards Harwich, at which place the Zeppelin had been reported. Climbing all the way he arrived over Harwich at 11,000 feet and saw anti-aircraft shells bursting

some little way off. Several searchlight beams were also concentrated on a particular spot in the sky. A minute later he located the airship and opened fire at long range from underneath. There was no result and he closed with her. Still there was no result.

Deciding to withhold further fire until the range was really decisive Watkins climbed to 13,200 feet and emptied a drum into the airship from 500 feet underneath. The L. 48 immediately burst into flames at the tail-end and soon the fire was running along both sides. She descended slowly into a field. Most of her crew were burnt to death during the descent, but the second in command, and two others, all gravely injured, were pulled from the burning wreckage by a local constable.

The final victory fell to Major E. Cadbury, who brought down the monster L. 70 in the sea off Norfolk on the night 5th-6th August, 1918. Cadbury well deserved his success for bad luck had robbed him of victory on more than one previous occasion.

On the night when Sowrey brought down the L. 32 Cadbury performed two patrols. In the course of the second of these his goggles flew off so that he could not see to fly. In consequence he drove into the sea and injured himself, though he was flying again in a week.

He was the first of the three pilots to attack the L. 21 which Pulling got. He was "up" in a Sopwith Pup when Watkins got the L. 48, and it is almost certain that he would have brought down her consort, the L. 42, on the same occasion had not his petrol pipe fractured at the critical moment. Now he was to reap reward.

This time he was flying a D.H.4, with Captain R. Leckie in the observer's seat. Soon after leaving the aerodrome at

Yarmouth he saw three airships about forty miles out to sea. They were steering westward in a leisurely manner and he immediately gave chase. It was then about 9.30 p.m.

By chance he selected the L. 70, newest of her type, for his attack. She was flying at 17,000 feet and he climbed to within 600 feet of her, attacking head on, though slightly to one side in case there might be an obstruction suspended from the under part. He concentrated his fire on a spot underneath about three-quarters of the airship's length from the bow end. Here, at this particular place, the tracers blew a hole in the fabric and started a fire which was soon running all the way along.

The L. 70 raised her bows in a frantic endeavour to escape by climbing. She then plunged seawards, a blazing mass, and was completely consumed in less than a minute.

Not content with this achievement, Cadbury now closed with a second Zeppelin, and placed himself in a favourable position for attack at 500 feet. He could not use his own front gun because he had reached his ceiling and the airship was above. So Leckie brought his Lewis gun to bear. Unfortunately it jammed with a double feed and in spite of every effort he could not clear the jam.

They were now fifty miles out to sea and turned for home. Down through four separate layers of cloud they went, the lowest of which was still 5,000 feet above the ground, and at last sighted flares on a night landing-ground, coming to earth without mishap.

III

Of all epic stories of courage and endurance, none is exceeded by that of the adventure of Flight Sub-Lieutenant H. M.

Morris and his passenger, Wireless Operator Wright, while carrying out duty in a Short seaplane.

Morris went out in the early morning of 24th May, 1917, to search over the water for a Sopwith "Baby" seaplane which had not returned from patrol. Thirty-five minutes later his engine stalled and he was forced to come down. The wind was rising, the water was already choppy, and he was far out of sight of land.

Two pigeons were released carrying the message of what had happened and the plight they were in. One of the birds was never seen again. The other dropped in an exhausted condition on to the deck of a mine-sweeper. It was cared for and comforted, released again after restoration, and finally the gallant bird regained its loft.

Four hours after coming down, the starboard lower plane was carried away and the seaplane could no longer be kept head to wind. Morris and Wright climbed out on to the other plane to balance things but, gradually, the seaplane turned tail to wind. In consequence the tail plane was broken up by the waves and the Short began to sink tail first.

They climbed out on to the floats and sat there precariously until the seaplane, rearing its propeller end, turned a complete somersault, leaving only the underneath part of each float above water. Just before this happened they had torn up the code-book leaf by leaf and distributed it piecemeal to the elements so that, whatever happened to them, it would not fall into wrong hands. The sea was very rough and the wind was blowing a gale.

For five days and five nights, having only a few malted milk tablets with which to support life, they clung to the half-submerged floats of their wrecked aircraft. Towards the evening of the second day it grew calmer and they sighted a flotilla in

the distance. On the third day an aeroplane flew right overhead but failed to notice them below.

On the fifth day their incalculable suffering was ended. A flying-boat saw them, circled at 600 feet for closer observation, and finally landed on the water alongside despite the fact that the sea was rising again. Terribly weakened as they were, Morris and Wright yet managed to catch hold of the drift wire at the nose of the flying-boat and, by that means, hauled themselves aboard.

Even then their trials were not over. The flying-boat made several vain essays to rise with the extra weight on board and finally broke its tail plane at the last attempt. Making a course for the nearest point of land it was taxied along on the choppy surface for some 25 miles. They then sighted the S.S. *Orient of Perth* and were taken in tow in answer to their signal of distress. Half an hour later two armed drifters came along and Morris and Wright were transferred to one of them, the *White Lilac*. On the evening of the fifth day they rejoined their base at Felixstowe.

CHAPTER NINE

FROM THE MERE GROUNDLING POINT OF VIEW

I

IT is time now to turn, in a closing chapter, to an aspect of the raids which concerned then, and will concern in future, each man, woman and child who are nationals of a country at war. The reference is to the passive, helpless civilian population who will be sought out and slain as if they stood in battle array, opposing themselves to the bayonets of the enemy.

They will be third parties to the transactions of war, as impersonally regarded in the contract as they are held to be in the accident clause of any ordinary insurance agreement. War will be carried to their hearths and homes of set purpose, because the nature of it must be to destroy the economic life by which a nation breathes and has its being.

The air raids over England during the Great War were but a foretaste, the merest nibble, of what lies now in wait. In no sense of the word could it be considered real air warfare. That is yet to come, with the modern perfections of the flying-machine. Over the fighting fronts in 1914-18 aircraft were always chained to the ground, purely auxiliary to what went on below. While as for air raiding, the results were paltry taken as a whole and the invading armadas were never irresistible. But the next war will be in and from the air, and if we are involved we will be invaded. Victims were only counted by hundreds on the last occasion. Hundreds of

thousands will be the toll when the fury breaks loose again.

Nevertheless a lesson is there to learn. The life-taking and limb-breaking and the other sufferings of the civil population, already touched on in these pages, which went on then in miniature, so to speak, will be exactly reproduced on the next occasion, though on a more grandiose scale. To relate, therefore, for the benefit of the newer generation, and to call to mind for the benefit of the older, a few instances only of true happenings, will disarm the charge of exaggeration and be, at any rate, of warning value.

II

Many and various were the raids, ranging all the way from total failure to deadly success. There was the "tip and run" variety whereon a solitary aeroplane or seaplane would wing to Dover or Ramsgate, drop a bomb or two harmlessly, and scurry back home as fast as it could fly.

At one end of the scale the raiders would be completely frustrated by darkness and the weather, bombing heaths, moorland and open fields in the fond belief that they were wreaking industrial devastation. At the other end there was the bold and successful enterprise when missiles of particular ill omen would drop from the skies to work a fearful destruction by the mischance of fate.

Of these latter a few have been selected in the following pages. They were the high spots of raiding. They will serve well to show what can happen here, there and everywhere when the next time comes.

PALMER'S ENGINEERING WORKS, JARROW, NEWCASTLE-ON-TYNE. The night of 15th June, 1915, was fine and clear, with

moderate winds on the north-east coast. On Tyneside the night shifts were in full activity turning out war material. It was a veritable hive of industry and right round the clock the great works unceasingly produced in three relays.

Two months ago the district had been lightly bombed by a single Zeppelin, the L. 9. But warnings had been given in good time, the places had been plunged in darkness, and the baffled raider had only succeeded in injuring a woman and a child for all his trouble. The visitation had been taken lightly in consequence and the small result had engendered a feeling of security.

On this June night, alas, things did not turn out so well. All the heavy shops from Tynemouth to the city of Newcastle were resounding to the clang and clash of machinery, but in Palmer's Works at Jarrow, particularly in the large fitting shop with its trade-glass roof, the work pressure was unusually high. More than a hundred men were busy in that one large space.

In the midst of the activity dull reverberations were heard above the metallic clangour and men paused to hearken. In the very act of doing so, before any realization of danger reached their senses, a bomb came through the roof and exploded in their midst.

When at last the rescuers had completed their task they counted 18 dead, mangled beyond belief, and 72 others with dreadful injuries. In addition to the flying fragments of the bomb itself, and the pieces of machinery which were thrown about, the roof had fallen in and the heavy, jagged, sharp-edged roofing-glass, falling from a height, caused a large percentage of the havoc.

Tyneside had been taken completely by surprise. So rapidly had the airship traversed the ten-mile distance, from Blythe

where she entered to Wallsend on the river, that the warning organization had not time to work.

Those who saw the Zeppelin were deeply impressed with the unhurried manner in which it went to work, floating gently overhead as if with a spirit of peace rather than murderously intent. For many months afterwards the rumour of airships anywhere on the East Coast sent masses of people from their homes to spend the night in the open country.

THEATRELAND, LONDON. Many Londoners in those War days sought relaxation at night time in places of public entertainment and on the night 13th-14th October, 1915, the theatres of the Metropolis were playing to good houses. At the Shaftesbury there was "Faust," with Carrie Tubb as Marguerite. Julia Neilson and Fred Terry were in "The Scarlet Pimpernel" at the Strand. The Lyceum was staging a melodrama called "Between Two Women."

Intent on their enjoyment the various audiences were suddenly brought to their feet by the noise of nearby explosions the significance of which by now they knew full well.

At the Strand the performers were assembled on the stage behind Mr. Terry, who then addressed the audience, advising them to remain in the comparative safety which the premises afforded rather than risk their lives in the open. His advice prevailed and then, turning to his cast, "we will continue," he quietly observed. There was a tense moment, at the end of which "Lady Blakeney" and "Chauvelin" resumed their dialogue.

At the Shaftesbury the manager came forward to announce that bombs were falling in the vicinity and to ask those who wished to leave to do so quietly. About a dozen people got

up to go and the remainder of the audience continued to sit, listening for what seemed an endless period of time to the crashes from outside. When the raid appeared to be over the manager came forward again, saying "thank God it is finished," and signalled to the orchestra. The conductor lifted his baton and Carrie Tubb proceeded to sing the "Jewel Song" in flawless tone and without a tremor in her voice.

At the Lyceum an interval was on as the bombs began to fall. Some had left for a quick "one" round the corner, and others to buy fruit at a pavement stall just outside. A stout, elderly woman had just purchased some golden russets when a bomb fell a few feet away and she was instantly killed. A young girl assisting the fruit-vendor was blown to pieces at the same moment. In all 17 people were killed outside the Lyceum and among them, 6 at least of those who had gone for a drink.

An officer who had just arrived from the trenches on special leave took a cab at Waterloo and gave a Strand address. His taxi suddenly stopped without rhyme or reason as far as the passenger could tell and the driver vanished into thin air. He noticed that the few people about were scurrying past at top speed, and he saw one woman look up at the fine night overhead with a drawn and anxious face and then deliberately hoist an umbrella. Looking up himself he saw, for him the unwonted sight of a Zeppelin, lit up by searchlights and moving majestically across the sky, and he was too fascinated by the spectacle to refer it to danger to himself. The next minute three terrific explosions nearby shook the earth and a policeman passed him at a run, shouting to him to follow. He did so and spent the ensuing hours, the first few of his special leave, extricating the dead and dying from the débris of destroyed buildings.

The German report of this raid, in which 41 were killed and 101 injured, read thus:

"During the night of the 13th-14th instant our naval airships attacked the City of London and important establishments in its vicinity with a liberal supply of incendiary and explosive bombs. At all places strong explosive effects and large fires were noticed."

DEFENCELESS HULL. Hull was always a sore temptation to the raiders. In itself it was an important objective, it had a bold appearance from the air and it was most temptingly demarcated by a bend in the broad estuary of the Humber. Mathy had bombed it in January, 1915, when the town was in an absolutely unprotected state, killing 24 and injuring 40 of its inhabitants. Rioting had broken out on that occasion and all shops with signboards bearing a name even approximately of Teutonic origin were sacked before the troops could restore order.

Now again, on the night 5th-6th March, 1916, still utterly defenceless, the hapless town was attacked twice by separate airships. Snow lay on the ground so that the dark waters of the North Sea ended abruptly, as Böcker the commander of the L. 14 put it, against the border of a white blanket.

About midnight the L. 14 arrived over Hull and bombed it at leisure for a good ten minutes. Schütze, commanding the L. 11 was at that time also in the vicinity looking for an easy target. He saw Hull under attack by Böcker and decided to take up the work as soon as his colleague had retired.

He recounts that his airship was clothed in an icy mantle which made her so heavy that she could not ride above 5,000 feet. It was bitterly cold with an extraordinary variation in the temperature which caused alternate thawing and freezing and

had a bad effect on the airship's buoyancy. The wind blew at over fifty miles an hour and drove the falling snow into the motor gondolas and the machine-gunner's nest on top.

A cloudbank closed below him over the town and he had to kick his heels and wait for it to go by. In an hour it did so and he saw the black ribbon of the Humber directly below. And there also he looked down on Hull bright in the glare of the fires which Böcker had caused to burn when he had earlier bombed the place. It was also clarified by starlight and looked, in its desolation, like a town snowed under. In the natural light from above, reflected by the snow, and in the firelight of the conflagrations the streets, docks, harbour basin, warehouses and blocks of dwellings stood out like the marking on a blue-print.

Hull seemed to cower beneath him and Schütze bombed it at full leisure for half an hour. He saw buildings topple and he noted a black void in the snowy surroundings where a whole block of houses had collapsed. Through field-glasses he could see antlike specks of humanity running hither and thither aimlessly.

Seventeen were killed and 52 injured in this the second agony of the town and the senselessness which fear begets again occurred. A trade-testing lorry belonging to the Royal Flying Corps was damaged and the personnel mobbed as an outlet to the people's sense of outrage.

Thereafter, even to the end of the War and under full protection from the Home Defence, in suitable raiding weather, thousands would tramp out into the country as darkness fell, taking children with them and perambulators laden with the more precious and portable household goods. It was an orderly procession which filed through the streets on these numerous occasions and silent for the most part. But how

harassing it must have been to the very young and the very old, the wearisomeness of it!

The town of Hull was a principal air raid victim.

TRAGEDY AT SHEFFIELD. At 11.45 p.m. on 26th September, 1916, the Field-Marshal Commanding in Chief of the Home Forces issued the following communiqué to the Press Bureau which was located in the museum room of the Royal United Services Institution:

“Several hostile airships crossed the East and North-East Coasts between 10.30 p.m. and midnight. Bombs are reported to have been dropped on several places in the Northern and North Midland counties.”

Twenty-four hours later this bare announcement was amplified.

“The principal attack was aimed against the industrial centres in the North Midlands. No damage to factories or works of military importance is reported. It is regretted however that a number of small houses and cottages were wrecked or damaged in some places and 29 deaths have been reported.”

Anyone who is in Sheffield and passes near the Baltic Steel Works of Messrs. J. Beardshaw & Sons may see a memorial with the following inscription to-day:

“1914-1918. THE GREAT WAR. LEST WE FORGET. ON SEPTEMBER 26 1916 NINE MEN TEN WOMEN AND TEN CHILDREN WERE KILLED BY A GERMAN AIR RAID ON SHEFFIELD. ONE OF THE BOMBS FELL CLOSE TO THIS SPOT.”

Such is the bare record of one of the most distressing incidents of the War on the home front.

The Zeppelins were out in force on the night 25th-26th

September, 1916. Four of them raided Lancashire and Yorkshire, penetrating as far west as Bolton and Sheffield.

It was the L. 22, under Max Dietrich, which flew over the latter of these two places. He passed right athwart the great armament works dropping high explosive and incendiary bombs, but, by great good luck, failed to do them any damage.

Success of a sort, however, did attend his efforts. The big works of the city lie on either side of the river Don away from the centre, and interspersed among them are to be found workers' dwellings, small back-to-back houses for the most part, two-storied and basementless. On a row of these, missing the huge plants nearby, one or two of Max Dietrich's bombs fell.

It was nearly half-past twelve when the tragedy occurred with its heavy toll of infant life. In one house father, mother, and five children were all killed. In a cellar for coal the members of three families, 8 people altogether, had taken refuge. They were all killed. The lightly built edifices collapsed in utter ruin along the entire row.

A little distance away a hundred-year-old Wesleyan Chapel was left with only a wall standing. By a curious chance it was lettered largely in blue and red with this text from the Bible: "This commandment I give unto you that you love one another."

A few marvellous escapes are recorded. A linnet's cage had the top blown off but the bird escaped with its life. Five small children were asleep on two beds in an attic when a bomb exploded. The roof was splintered, but although slate, plaster and rafter material littered the beds the children were none of them seriously injured.

Late the next afternoon a small curly-headed boy was unearthed from a wrecked house where he had been pinned,

unable to move, for sixteen hours. He was absolutely unhurt and his escape was accounted miraculous. People gathered together and sung the Doxology while the boy was paraded on the shoulders of a man, munching contentedly a large slice of cake. A Salvation Army lass began there and then a Service of Praise and all around joined reverently in it, so stirred were they by the story of the deliverance. Still more to the point a young girl in the uniform of a tram-conductress started a copper collection.

One small incident remains to be told. A man got six months the next day for refusing to put out his house light at the bidding of a special constable.

A NOONDAY IN LONDON. This reminiscence is more in the nature of a remarkable event than a grim tragedy. No life was lost and ten people were injured.

Londoners were hugely puzzled and surprised to read in the evening papers of 28th November, 1916, that they had been bombed at noon by an enemy aeroplane. The official communiqué read thus:

"Between 11.50 and noon this morning six bombs were dropped on London by a hostile aeroplane flying at a great height above the haze. Four persons were injured, of whom one, a woman, seriously. The material damage is slight."

And later:

"Ten persons were injured in London this morning by the bombs dropped by the hostile aeroplane."

But later still:

"The Naval Commandant at Dunkirk has been informed by French authorities that they have brought down an aeroplane at 2.15 p.m. to-day carrying two naval lieutenants with a large scale map of London."

FROM THE MERE GROUNDLING POINT OF VIEW

In such a way a curiously complete little incident opened and closed. The six 20-pound bombs fell in a line between Brompton Road and Victoria Station, nearly all the casualties occurring in the latter vicinity.

It was the morrow of the air raid on the North Midlands when two Zeppelins had been shot down in flames by our pilots and jubilation was in the air. The news, therefore, of this daring flight in the noontide of day over the capital itself damped the self-congratulation and caused a little shiver of expectancy.

The visitor was never even seen, so high did he fly in the hazy air above, and that is what made people feel unsafe. The agency had been an invisible one which had struck down 3 women and 7 men in broad daylight. It was in every sense a bolt from the blue.

TONTINE STREET, FOLKESTONE. About 5 p.m. on 25th May, 1917, a fleet of 21 Gothas flying very high in a cloudy sky came in just to the north of the Thames estuary bound for London. Dover had duly reported their approach and warnings had been circulated far and wide. London was thus prepared for eventualities and so also were most other places in the south-east of England. But for some quite unaccountable reason which has never come to light neither Shorncliffe nor Folkestone were told. It was an ill chance for both places.

Heavy cloudbanks ahead caused the raiders to give up the idea of London. They turned south, flew across Kent and went out over Folkestone, dropping 163 bombs on that place and on Shorncliffe Camp.

At Shorncliffe, which was full of troops, mostly newly arrived Canadians, exercise and training were in full swing and the several parade grounds crowded. Seventeen soldiers

were killed and 93 wounded. This was great loss and tragic enough, but at least it can be said that men in uniform under arms were fair game for an enemy in time of war.

What can be said of Folkestone where a terrible tragedy had simultaneously been enacted; where 72 civilians, mostly women and children, had been wantonly slain and 91 others injured?

The German official report read as follows:

"During the course of a successful raid one of our air squadrons dropped bombs on Dover and Folkestone on the South Coast of England. Long distance flights inland also gave good results."

It was after working hours on a Friday and the weekly wages had been paid. A great number of women, their children with them, were out shopping for the week-end. Tontine Street was especially thronged with an eager, bargain-hunting crowd, avid to be among the first to be served in a time of scarcity. A large drapery establishment was at its busiest, and a long potato queue had formed on the pavement outside the open premises of a greengrocer. The children were in groups of their own at play while nearby the mothers congregated to gossip and to shop. It was an evening of golden sunshine and immediately overhead not a single cloud was in the sky.

Such was the setting when the rain of bombs descended. There was no time to take shelter even if shelter had been by. Unsuspecting and wholly unprotected, parents and children fell in heaps and the streets became a shambles.

Children were blown to pieces in the middle of their play. A child's hand and wrist was found two days later a long way off. Eight dead and dying women lay at the feet of a police constable, himself in the freakish manner of bombs, unhurt.

There were many victims in the drapery establishment. Outside the greengrocer's a hole had been blown in the roadway large enough to engulf some of the victims. A wine merchant had invited a friend to sample a bottle. When he returned from his inner room with corkscrew and glasses his friend lay dead with head completely severed from the body.

The harvest of the raid was women's tears and men's undying hate. Later, when all that was possible had been done, 20 boys and girls, of childish age, snatched from life on a perfect day, lay alongside of each other, with flowers in their mutilated hands, a sacrifice to the evil of modern war.

INFANT DEPARTMENT, POPLAR SCHOOLS. Childhood suffered terribly at home during the War. Children were orphaned on the battlefields and forced to bear the burden of their mothers' grief as well. They were consistently under-nourished in the latter stages of the War and their lives were constantly upheaved by days and nights of fear. Too often their tender life was poured out by the cruel mischance of a bomb aimed at nothing in particular but just let drop. The Tontine Street tragedy has just been described. Here is another worse even than that.

The German official report said:

"To-day our airmen dropped bombs on the Fort of London."

Our own communiqué contained the following:

"Another bomb fell on a school, killing sixteen and injuring about 50 children. A number of warehouses were damaged and fires caused. No damage of a military or naval nature was done."

This bald announcement, and the enemy's callous reference

above, refer to the first daylight Gotha raid over London at noon on 13th June, 1917.

A lady clerk in the Air Ministry, as it was soon to be, at that time located in a hotel on the Thames Embankment where Unilever House now stands, looked out of the window to see what she described as a shoal of little silver fish darting about miles up in the sky. Someone else referred to the monster death-dealing machines as large white butterflies in the sunshine of the cloudless day. But the mothers who wept for their little ones in the Babies Department of the North Street Schools, Poplar, allowed themselves no such poetic licence when they tried to sort, from among other almost unrecognizable remains in the mortuary baskets, those which belonged to them.

The bomb which did this damage only weighed a hundred pounds and half of it, shorn off as it passed through the roof and three stories to the ground floor below where the Kindergarten class was assembled, did not explode at all. All the same, when it did arrive amongst the 64 tiny tots at their lessons, it killed 16 outright and mangled 30 others.

The news spread like lightning and, without panic, without hysteria, with only a dreadful anxiety, from all directions came the parents running. Some wept softly to find their children safe; others wept different tears on finding them dead or cruelly hurt. It was a scene of emotion and nervous tension which few, thank God, are called on to endure.

Mr. Will Crooks, M.P., was on the scene and wept unashamedly. So did five burly bluejackets who were rendering help.

"If it had been grown men like ourselves," they said, "we could have stood it. But these little children—it is too much."

There was no crying aloud for vengeance, or loud demands for peace at any price to stop the horror. What had happened was accepted in the account with grief and mourning in the reckoning. Here is a typical event out of many such.

A girl of eleven, one of the 600 scholars which the school contained, was on an upper floor with others of her age when the bomb exploded. Thinking only of her five-year-old sister in the Infant Class below she rushed downstairs to see if she was safe. Parents were already crowding the corridors searching for their children amid a clamour of voices. The little girl entered the wrecked class-room and was aghast at the sight. Frantically and in vain she searched everywhere for her sister. Two hours later the father identified his baby in the mortuary.

There were other tragic happenings on that day. A train for Hunstanton standing on No. 9 platform at Liverpool Street Station was hit by a bomb which wrecked the restaurant car and two others, killing 16 and injuring 36. Four workmen were killed and 30 injured when a bomb fell at the Mint. And so on. But nothing equalled, or ever can, the awful tragedy of the Infant Department of the North Street Schools in Poplar.

LONDON'S SECOND DAYLIGHT RAID. Three weeks later the Gothas reappeared over London in the late morning of another fine day. A feature of this raid was the clear and prolonged view of the raiders which those abroad obtained and the unhurried deliberation with which they set about their fell work. As one described the sight, they resembled mighty eagles with wings outspread against the sky and showing dark grey in the haze. On account of their huge size the Gothas did not seem to be higher than 5,000 feet. "They can't be Ger-

man," people said to each other reassuringly, "they must be our own machines."

But the sound of maroons quickly dispelled all doubt and there was a universal rush for shelter. A silence as of that on Armistice Day fell around. Some drawn to the curb, others not, horses stood unsuspectingly in the shafts of their vehicles, whisking ears and nodding heads.

In Bermondsey several adjacent houses of humble folk were wrecked, under one of which lay crushed a woman and her small son. In the midst of the effort to get them out a soldier appeared, loaded with equipment and fresh from the trenches on a few days' leave. It was the husband and father. Staring unbelievably at the sight of his ruined home he demanded the whereabouts of his wife and child. He was gently told the truth and immediately went off into peal on peal of laughter, tearing at the wreckage with his bare hands. Two constables took kindly charge of the man and he went off with them still laughing aloud.

CHATHAM DRILL HALL. The defence very soon became too good for further daylight raiding, and on the night 3rd-4th September, 1917, the Gotha pilots for the first time tried their hands at night.

In Chatham, as it so happened, notice had been given that anti-aircraft practice would take place after dark. Those who were abroad, therefore, a little after eleven o'clock on that exceptionally fine night presumed that the droning noise overhead and rapidly approaching were our own aeroplanes teaching the guns how to range.

The Drill Hall in the Naval Barracks was being utilized as a dormitory. It was slung with hammocks almost touching each other for economy of space, and occupied by several hundred

young sailors who were to be drafted in the morning to their ships. It seems certain that the loudening, humming, overhead sound did not reach their sleeping senses.

They had a rude awakening. Two bombs of the sort familiarly known as "Crashing Christophers," and weighing 100 pounds, came through the roof of their sleeping quarters. A hundred and thirty of the young men were killed outright and a further 88 were variously wounded.

Until dawn and later rescue parties were busily engaged in extricating dead and wounded from the litter, and in collecting severed limbs in bags. In many cases the hammock was the shroud and the air was filled with moans of pain. At daybreak the "General Pipe" was blown and survivors were assembled and asked to do their best to pick out their own mess-mates from the mangled remains laid out in rows on the ground.

SOUTHAMPTON ROW. The Harvest Moon series of raids was inaugurated on the night 24th-25th September, 1917.

Nearly all the casualties on that occasion, amounting to 21 killed and 70 injured, were caused by a high explosive which burst immediately in front of the main entrance to the Bedford Hotel in Southampton Row. Hotels abound in that vicinity and the Bonnington, the West Central and the Cosmo were also damaged.

How many people to-day whose business takes them towards that locality ever picture to themselves what happened there nearly twenty years ago? Workaday affairs are very prone to blot out memory. From Russell Square to Theobald's Road pavement and roadway were littered with broken glass almost ankle deep. Fire engines were busily at work and ambulances came and went. This is what took place.

Many people had come into the Bedford for shelter and the

foyer was also thronged with staff and guests. There appeared to be a lull in the din of bombs exploding and guns discharging, and the door was being cautiously swung open by a porter to take a peep at things.

At that very moment, also, a doctor, who had just left his surgery in Rosebery Avenue in charge of a partner in order to get a bite to eat, taking similar advantage of the apparent lull, was on the point of entering. He heard the hideous whine of a descending bomb, seemingly directed at his head, and a quick instinct galvanized him into action. In a single stride he gained the door and barged inside, knocking flat the first person he came up against and falling on top.

In that way of luck he saved his own life and that of the man he had flattened out, for his calculation had been true. The bomb he heard struck the pavement just outside and everyone else standing erect in the lobby was either killed or wounded on the spot. As usual much of the damage was done by splintered woodwork and icicle-shaped fragments of thick plate glass.

MESSRS. SWAN & EDGAR. The notorious "Silent Raid" has already received considerable mention in these pages. It will be remembered that one of the raiders, the L. 45, gripped by a raging gale in the upper air and unaware of her position, suddenly recognized London below and released all her bombs. This was at about 11 p.m.

The first warning had been given hours ago and people presumed, especially from the silence of the anti-aircraft guns, that the whole thing was over. In Piccadilly Circus they came freely into the open and there was almost a concourse when one of the L. 45's bombs hit the pavement just outside the Circus side of Swan & Edgar's and blew a hole twelve feet deep.

A "Nippy" from the Coventry Street Corner House was loitering outside Slater's, idly reading the menu posted up outside while waiting for a No. 30 bus to take her home. An elderly woman leading a small boy by the hand asked her how best to get to Victoria. An officer in khaki emerged from a side door and suddenly hugged the Nippy in a tight embrace. He did not do so for any amorous purpose. He was doing what he could to save her life and he succeeded.

For at the same instant there was a deafening crash, a blinding flash and, for the Nippy, darkness. When she regained her senses the elderly woman and the small boy were lying dead across the pavement and the officer who had had the instinct to protect her was lying dead at her feet.

Charles Hawtrey, the famous actor, who was playing in "The Saving Grace" at the Garrick had left the theatre and was about to have some supper. The force of the explosion blew him through the Trocadero door, bruised but not seriously injured.

A female member of the cast had just left the stage door when the bomb fell and she rushed for safety to the Leicester Square tube. A frenzied mob was pouring in as well when she arrived. One of the lifts was being used as a first aid station. Every square inch was densely packed with humanity, stair-cases, corridors and even the platform. These people, poor folk from the tenements at the back and nearby had been there for hours, ever since the first warning. They lay all about. Some had bedding with them, others rugs and bundles, and many were fast asleep. There were babies in arms. Broken food, banana skins, apple rind, and orange peel, even ordure, littered the space unoccupied by bodies.

A girl whose home was in Vine Street sought shelter as usual in the underground ball-room of the Piccadilly Hotel.

Deceived also by the length of time since the first alarm, the people there had started to go home when the bomb fell. Grill-room waiters, trays in hand were blown down the stairs. Every window in the hotel was blown out. From the Circus to St. James's Church in Piccadilly not a single window-pane was left intact.

As for Swan & Edgar's, the whole shop front had been wrecked so that goods and wax dummies were strewn far and wide. Some of the rescuers, after struggling frantically to save life, would find that their efforts had been wasted on fashion models in wax.

The bomb, a 220-pounder, killed 7 and injured 18 in the immediate vicinity, but Cupid escaped unscathed.

THE CRIPPLEAGE IN CLERKENWELL. On the night 18th-19th December, 1917, the first 660-pound bomb was dropped. A Giant dropped it and it fell in Lyall Street just off Eaton Square. Another bomb from the same Giant, one of smaller size, fell in the grounds of Buckingham Palace. The pilot seemed to be specializing that night on royal and aristocratic neighbourhoods. But there were doings also in a very different quarter.

In Clerkenwell two young girls, sisters, were going along Garnault Place when the "take cover" went. The streets were fast emptying as they stood undecided what to do when a cripple girl called to them to follow her to shelter. She led them in her hobbling way into the basement of Groome's Crippleage which had been designated as an official shelter.

Men helpers were busy carrying the helpless inmates down from the upper stories and already the basement room was well filled with men, women and children from outside. A gas jet flickered feebly. An old, wheezy harmonium stood in

the middle of the room. A pavement light skirted one side.

The bombs began to fall and as the deafening crashes resounded, the Crippleage being seemingly the centre of the inferno, the hymn tune "Jesus wants me for a sunbeam" was struck up on the harmonium and everyone present loudly joined in to try and drown the din outside. The St John's Ambulance man, axe at belt, stood at guard and the nurse allotted to the refuge flitted to and fro to comfort the pathetic gathering.

For three endless hours in relay the raiders came and went that night. The reflection of a burning piano factory in Farringdon Road latterly illuminated the basement and the final bomb of the raid blew in the pavement light and huddled the weary waiting people in heaps on the floor. But mercifully no one was either killed or injured.

ODHAM'S, LONG ACRE. The moon was full and evil-faced on the night of 28th-29th January, 1918, and the people of Shoreditch, in consequence, were easing along towards the Bishopsgate Street Goods Station at the junction of High and Commercial Streets just in case the raiders came. There were solidly build railway arches in the yard, a much safer shelter from bombs than the lightly constructed houses in which they lived. The movement set in about 8 o'clock, women pushing prams or clutching bundles of hastily gathered household effects, and the men carrying weightier objects. A queue for the second house of the Olympia Music Hall was forming at the time.

Suddenly a series of sharp bangs came from not far away. Actually they were maroons giving warning of a raid, but the people were not as yet accustomed to the sound and, in their

nerve-tautened condition, mistaking them for bombs, made a wild stampede for the station gates.

Alas, on this occasion they were locked and the first ranks were heaped up against them and battered by the pressure from behind as flotsam is jammed by flood water which can only trickle through. Worse came when a railway policeman managed to half open one of the double gates. For then the mad energy was partially released with a trampling underfoot and a crushing against the pillars and abutments which resulted in the death of 14 and the injuring of a like number, mostly women and children.

At the inquest witnesses attributed the disaster to the behaviour of young Russians, the quarter containing a great many of that nationality, and the coroner found occasion to remark that their ways approached the ways of lower animals.

Supreme tragedy was also being enacted in Long Acre at the time, but first another tube description will be given. It is at Aldwych, and soon after the air-raid warning the small platform was crowded almost to capacity by refugees. The space was further congested by wounded New Zealand soldiers from the hutments on the Strand island site. One of them, a choir-master in his own land, started community singing to ease the tension. Occasionally the sound of bomb explosions, dulled though unmistakable, reached below, and sometimes the precinct trembled even at the depth it was.

The wounded soldiers were also mostly shell-shocked, and however hard they tried they could not keep their limbs from trembling. The motorman of the single coach train to Holborn and back filled up with children time and time again so as to distract their minds from what was taking place above ground and ran them to and fro. The women, huddled like

sheep at a shearing, in all stages of undress, squatted everywhere. The babies, too young for understanding, querulously voiced their complaints.

In Long Acre that night one of the major tragedies of the War befell.

Among other official refuges in the Covent Garden vicinity was the large basement of Messrs. Odham's printing works, better known at the time as the offices of *John Bull*. There, among the machinery and rolls of printing paper two or three hundred people might congregate on air-raid nights. It was a good shelter but for one defect. It was dimly illuminated by day by the method of a pavement light which ran the length of the building. But only the most unlucky bomb could discover this weakness and the danger was entirely discounted. It was millions to one against.

But bombs are unthinkingly let drop when a city lies below. They do not reckon odds. They just fall. And so it was with one particular bomb weighing 660 pounds that night. It crashed through this very pavement light and the whole force of its explosion was directed inwards to the crowded basement which had provided sure safety so many times before. The scene is better imagined than described. Thirty-seven of the safety-seekers were killed, and 89 injured. To add to the horror, weakened at its foot, the whole building collapsed and fire broke out. Days passed before it was certain that there were no more bodies to recover.

At a school nearby there is a brass plate engraved with the names of those of its scholars who thus perished.

WARRINGTON CRESCENT, W.9. Just as the raid of the 18th-19th December, 1917, was signalized by the first dropping of a 660-pound bomb, that of 7th-8th March, 1918, was marked

in like manner. Only this time the new contraption weighed a ton and it fell in Maida Vale.

Actually it fell in Warrington Crescent, a street consisting of solidly built, four-storied structures reminiscent of the Victorian grandeur in which well-to-do people then lived. Four adjacent mansions were reduced to a pile of unsightly wreckage. Four hundred others, in the Crescent and round about, were more or less damaged. All had every pane of glass shattered and the broad roadway opposite the Warrington Hotel, where five thoroughfares meet, was so littered with glass fragments and powder that it was like a shingly beach to walk on, giving with the same scrunch to the tread.

Twelve people were killed. A piano was being played on a top story. Instrument and player fell with the collapse and both were found crushed in the basement below. A baby was killed in its cot. A man's shattered body was found with a newspaper still in his hand. An open novel was found beside a dead woman when her body was uncovered. A young woman, clad only in a nightdress, was eventually rescued high up in a shattered house where she had been hanging from a beam with her hands. Mrs. Lane Ford, who wrote the words of "Keep the Home Fires Burning," was among the victims, her mangled body being recovered on the fourth day. Her crippled son, Walter Ford, was also killed, only Mrs. Ford's old mother, who was living with her daughter, escaping with life.

These people, as the evidence surrounding them displayed, were cut off in utter ignorance that danger was impending. A lightning stroke could not have been more sudden.

On the morning after, a man's voice was heard coming from the depths and brickwork was cut through to release him. When they got him out he was at his last gasp and died

a few hours later. Two children had been buried with him at the same moment, but they were both already dead.

III

It is enough. These incidents have not been recounted for the purpose of piling horror on horror. They have been cited as serving to show a cross-section of what actually took place. Multiply them by ten or twelve and the result will be a complete whole. Multiply them four or five hundred times and the result will be a moderate picture of what will happen on the next occasion. They were only little raids, comparatively, which did this damage. Air Power in those days of the War was not very seriously regarded.

In future it will be War itself. How will it bear on the inhabitants of the home country when that time comes?

An attempt will be made to show.

•

PART II

A SHORT HISTORY OF THE NEXT WAR

•

CHAPTER ONE

THE FIRST BLOWS

THE title of this Part somewhat belies its actual scope, for it is of England in general, and London in particular, that the matter treats.

Nevertheless, it is not far wide of the mark. As things turned out it was the fate of London and the pressure on the country outside which brought a swift determination to the War, making of it the briefest on record. To call therefore, "A short history" is apposite from that point of view.

There is no intention to deal in technicalities. Although scientifically conducted in the truest and most horrible sense of the word there will be no need to specify the means employed during this short affair in other than the broadest of terms. The subject matter is concerned entirely with the outcome of events and do not deal in data of research, or in other minutiae, which account in scientific phraseology for the possibility of what takes place. There will be nothing either in this reading, or in those which follow, to cause the slightest misgiving on the score of unintelligibility.

A brief reference to the political groupings at the time will be necessary. And here again plain, unembroidered statements will be best. They were the outcome of secret policies, with the public of each country concerned either hoodwinked, or entirely in the dark. The analogy is that of a garden lawn

which overnight is a fair presentment of what a lawn should be. In need, no doubt, of sweeping and mowing, especially in its corners, it is to every eye. Such untidiness, however, can be easily corrected by means of labour and goodwill. But during the hours of darkness moles get to working underground, and in the morning the lawn is seen to be upheaved and its surface lumpy and defaced. The sward is there, but it does not lie level any longer and there seems to be no other course open than to relay it throughout.

In that way did secret diplomacy work to bring about the War, the short history of which is to be related. And this was the condition of the political surface.

Russia and Japan, though not in actual conflict, were very much at daggers drawn, the former reliant on the French alliance to protect her European frontiers. Czechoslovakia formed a solid connecting link between the two and had been well subsidized to afford aerodrome facilities for either of the powers should the need arise.

Poland and Germany formed a brotherhood in arms, and to this strange friendship was admitted Italy, so notoriously prone to break her pledges for a self-seeking motive. On this occasion recognition by Germany of an independent Austria for a period of twenty-five years had been bait which Italy had swallowed. Flushed with success after her Abyssinian adventures, confident, and with an army of experience on active service, she was a welcome addition to the Central European bloc. Above all, her aviation was a proven success in the field, her Air Force thoroughly up to date and efficient, and her pilot personnel second to none.

France and England had continued their unnatural bed-fellowship, the one obsessed by fear of a re-armed Germany and unreasonable in her ways, the other concerned mainly

to tip the political scales and effect as true a balance as possible.

The Balkan States, for a wonder, seemed to be lying low and waiting on events. Turkey watched Greece. Spain and Portugal were in anarchy—Scandinavia went her usual ways. The other Baltic States neutralized each other. While Belgium, Holland and Denmark, conscious of their military inferiority and too well aware of their precarious geographical situation, were content to do nothing and hope for the best.

The United States of America and the rest of the world kept out of it all.

Such was the state of affairs in Europe when it became known that Italy was tunnelling the south-eastern side of Lake Tsana in Abyssinia with a view to controlling the water supply of Egypt and the Sudan.

A strongly-worded protest from Great Britain was sharply replied to. A threat to close the Suez Canal to Italian shipping followed. The League of Nations having ceased its existence, there was no tribunal to apply to for adjudication of the dispute. Tension on both sides increased and mobilization was in the air.

The British Fleet again gathered in the Eastern Mediterranean and Italy lined up her Libyan army along the Egyptian frontier—France manned the Maginot Line, but did not call up her reserves. Poland strengthened her forces facing the Ukraine on the plea of spring manoeuvres in that region. On every side there was an unmistakable preparation for war, but no overt hostile act. It seemed that each country in turn shirked having recourse to its laws of mobilization, unwilling to precipitate a conflict which former experience had told them must mean nothing less this time than the doom of European civilization.

Meanwhile the news from Germany was scant. A censorship had come down on her Press and publications, and a surveillance on all her frontiers, which completely cut her off from the outside world and prevented every source of reliable information.

In London, and in the large provincial towns of England, people were subdued to a conscious state of apathy. They had been so frequently of late poleaxed by Press placards, announcing tension, warlike measures, and the imminence of an outbreak, that a form of mental case-hardening had resulted, and the staring letters of the paper headlines were mostly read with the detachment with which news of an earthquake in Japan or Central America might have been received. They simply would not believe that it could come to war. The voice of the Press was too clamant.

In any case, the people argued in an optimistic vein, if quarrel there was it would only be with Italy on this occasion, and surely their ally, France, could be relied upon to keep the lists. War with Italy would be purely a naval affair. The Navy would pound Italy's extensive and unprotected coastline and beat that swollen-headed country to a frazzle. Such a war would hardly touch England at all. And was it not also common knowledge that much of England's Air Force, bombing and fighting-squadrons, and several aircraft-carriers, were there to back up the Navy in the Eastern Mediterranean? There was a vast difference between that sort of thing and the conquest of a country ill-defended by hordes of untrained and badly armed semi-savages, misled by feudal chieftains loyal only to themselves. There was all the difference in the world between the might of England, afloat and flying, and the pathetic weakness of Abyssinia.

So argued the man in the street, and meanwhile, quite

unconscious of the thing impending, he pursued his lawful occasions and let time go by.

There was no doubt in official minds, and in those of the educated and better-informed classes, that Europe was on fire. But the fact remained that she was not ablaze. It was like a slow combustion between decks in a cotton cargo rather than the makings of a bonfire. And the main concern of countries, like Great Britain, who wished to avoid war at almost any cost, was to keep the hatches closed and thus prevent a forced draught.

Unfortunately, the carelessness of a member of the crew completely nullified the effort.

Austria, regarded on all sides as a passive pawn in the game, chose the wrong moment and broke out in revolution with the Monarchist party in the ascendancy. Otto von Hapsburg was smuggled to the scene of action and put himself as military leader at the head of his party. Jugo-Slavia issued a decree of mobilization and at once the fire in the hold got out of hand.

The first reaction to this news when received in England and published in the Press was a feeling of temporary relief. With Italy thus occupied anew in Central Europe her hands, the argument went, would be too full to withstand British pressure in the Eastern Mediterranean and North-East Africa. She would be obliged now to accede to Great Britain's demand for a guarantee that the source of the Blue Nile would remain untouched. The *casus belli* would disappear, and if fighting occurred it might possibly on this occasion be confined to the Continent where the quarrel was none of England's immediate concern.

Ready to grasp at any straw which might assist him to keep his much-preached isolation the English citizen continued to read the football news with greater interest than the European

bulletin; while the stupid and deluded man of business rubbed his hands and chuckled at the prospect of executing foreign orders for munitions.

Things cannot really be so bad, he said, for otherwise the Government would be making active preparation, and nothing of the sort seemed to be going on.

The country remained calm, and London looked forward to the great event of the year, to the Air Force Display at Hendon which was to take place on the Saturday, two days after the *demarche* above described had happened.

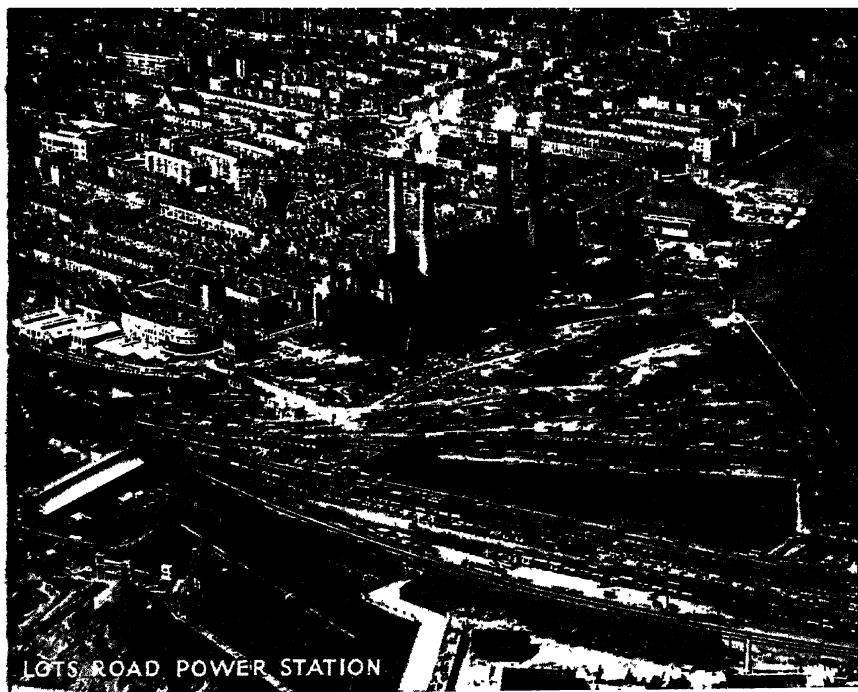
It was there that the first blow fell, and Germany delivered it.

Regarded as an operation of war it was a triumphant success. The surprise was complete and the paralysing effect was immense. Whatever brain had conceived the project belonged to a military master-mind.

The Hendon Display since its inauguration has been a major attraction of the London season. The attendance invariably runs into six figures for those who pay for admission alone. In addition to that the neighbouring points of vantage are crowded with sight-seeing humanity. It is a fashionable gathering as well and the highest social ranks are fully represented among the onlookers.

Representatives of the sister services to the Air Force, the Army and Navy, receive special invitations and many senior officers attend. Members of Parliament are there in great quantity and among them Ministers of Cabinet rank. The Diplomatic Body are guests also at the Display, and the Dignitaries of the Church. It is a truly representative concourse, a veritable section of the totality of class. It can be likened to a large slice of cherry cake with all the fruit collected at the top.

And over and above all else are the displayers themselves and their contrivances, together with the Air Ministry, officers



of Air rank throughout the country, and innumerable juniors who have come to be spectators. If in general the assembly is a fruit-cake slice, the Air Force contingent forms a whole cake to itself.

It remains to mention that Air Force units from all over the country assemble to take part, and that the latest aircraft types, too recent to be included in formations, are on view in an enclosure apart for the select few.

It was a brilliant day in late June, and the sky overhead was a dazzling blue. Aircraft at great height were soon lost to view for want of a focal point to locate them by, and it was a weariness to the eyes to look up for long at a time.

The day before, and even on the morning of the event, formations had flown from far and near to the gathering-ground, so that town and country residents wide afield of London were accustomed to the sight and sound, knowing what they portended.

To this fact must be ascribed the entire absence of alarm while the hostile aircraft made their approach north of the estuary of the Thames.

They flew low moreover, reliant on surprise to offset danger from the ground, and in consequence were not discernible from afar. They arrived over the Hendon vicinity almost unheralded. The air was already too full of vibrations for this extra set to be readily noticeable, and all eyes were directed to the parade-like manoeuvres of four bombing-squadrons immediately overhead, engaged in a kind of aerial musical ride.

Eye-witness accounts are greatly at variance. At such moments of intense cerebral excitement the senses become dilated, and impression follows impression with such rapidity that the after-result is a jumbled sequence. But a careful collation of evidence points to the following order of occurrence.

There were eighteen in all, in three flights of six, and they arrived over Hendon at four o'clock in the afternoon, just as the squadron air-drill was about half-way through. The estimated height at which they flew was seven hundred feet, and they were thus only a hundred and fifty feet above the drill formations.

There was some commotion among the huge audience and a few people started to their feet. The band stopped playing. The drill continued.

There were cries of "sit down in front" from those who found their view obstructed by the standing rows in front. And then above the resounding din of so many aero-engines at full power in a small cubic space, the staccato note of machine-guns was heard.

But ere this a stampede had commenced. Someone in the crowd, it is stated, with a sudden full realization of what was happening, or about to happen, had uttered words of amazement and alarm which communicated fear in a flash. In that particular vicinity panic at once set in, and the multitude thus brought to its feet swayed, and struggled in all directions at once to disseminate itself and shake free from the precincts.

In the middle of the flying-field eight machines belonging to the drill formation were burning on the ground, shot down by the hostile aircraft in the middle of their demonstration. The remainder had scattered and dispersed in a manner of *sauve qui peut*, though it was subsequently ascertained that the intention was to gain the nearest suitable aerodrome, arm and return.

Bombs had by then already begun to fall. There were high-explosive missiles of various size up to 600 lbs., gas bombs of differing weight and a great quantity of 6-pound incendiaries.

There is no need to descant on the scenes of ruthless slaughter

which took place. The whole affair, as far as the actual attack was concerned, lasted no longer than ten minutes. The hostile aircraft kept formation throughout, the three flights each in line abreast, and at an interval of about 500 feet, flying with throttled engines across the breadth of the enclosure, bombing at will, and then drawing off to make a circuit and repeat the process. Thrice it happened thus. And then, either satisfied with what they saw below or with nothing else to let fall, they turned east, still at the low altitude at which they had conducted operations, and quickly disappeared from view.

The devastation they had wrought was very nearly complete. At least three-fifths of the loosely estimated crowd of onlookers, including the considerable number who had been watching the Display from high ground in the vicinity as well as the audience proper who were seated, amounting probably in all to not less than 150,000 had been put *hors de combat*.

A rush had been made instinctively to the motor park which extended in a circle segment from end to end of the enclosure immediately to the rear of the serried rows of spectators. Although the thousands of cars had been scientifically arranged by A.A. and R.A.C. officials with a view to a quick getaway when the Display was over, none the less the circumstances of a wild rush for safety had not been provided for and the car park, in consequence formed an impassable barrier and became a death-trap.

People were entangled in a motor mesh, to give the scene an apt description. The very few who succeeded in starting up merely jammed the carefully laid-out alley-ways of exit. Many tried the expedient of passing through car after car from door to door in a painful effort thus to edge gradually towards the main entrance, and theirs was an evil fate.

The incendiary bombs had caused many fire points, directly

they had begun to fall. The experimental aircraft park, where the newest types were packed close, was a roaring furnace, and so was the ground space nearby which had been allotted to the aircraft required for the several items on the Display programme. The sheds in the background, the club premises and the offices of administration were likewise burning. But the worst effects of this particular form of attack occurred in the car-park where the vast majority of those blindly intent on escape were struggling like fish in a net. The simile is good because they were veritably netted, and in this situation they became the victims of fire. On all sides the cars were set alight by the small incendiary bombs which burnt inextinguishably and in numerous instances caused the tanks to explode.

The loss of life caused by the unexpected attack was enormous. The high-explosive, the gas bomb and the incendiary had each contributed their unequal shares, and mob panic had done the rest. But even worse from the point of view of direction of the nation's affairs, and of means to retaliate in kind, was the utter disorganization and chaos caused by the peculiar importance to Government and to the Services of Defence of many of those dead, dying and seriously injured.

The Board of Admiralty had lost its First Lord, its Second and Fourth Sea Lords, its Deputy Chief of Naval Staff, and its Permanent Secretary, besides many naval officers of senior rank who had travelled from Portsmouth and other stations to see the Display.

The Army Council had suffered similar loss, which included the Secretary of State, the Permanent Under-Secretary and the Adjutant-General to the Forces, and the Master-General of the Ordnance.

Space had been set aside for Members of Parliament, who had been issued with courtesy invitations, and a heavy toll

of life had been taken in that quarter. The Cabinet had fortunately not been largely represented at the gathering though by no means had it escaped scot free. Apart from the First Lord of the Admiralty and the Secretary of State for War, already mentioned, it lost the Chancellor of the Exchequer and the Secretary of State for Home Affairs.

These were most serious losses indeed, but they were repairable. Emergency Government Resolutions could, and did, swiftly operate to fill the gaps thus occasioned and close up the legislative ranks. What, however, was more serious still, and irreparable except over a long period of time, was the decimation, no less, of the Air Force itself. It was present almost *en bloc*.

The Air Ministry, from Members of Air Council to Directors and Assistant Directors of Departments and key-position subordinates lower in the hierarchy, was for all practical purposes as a great Department of State completely wiped out. From the Headquarters of Commands and from the aerodrome out-stations throughout the length and breadth of the country universal leave had been granted for this the great event of the Air Force year, and pilots, apart from those engaged in the Display, had gathered in full force. It was to them what the late-autumn motor show is to the motoring trade, or even what a Bank Holiday is to the populace at large, the occasion of a great gathering for a specific purpose.

To the Air Force, in consequence, and through it to the country in a universal sense, the blow which had been dealt was almost mortal. The effect was much greater than could have been any carefully premeditated attack, or series of attacks, on separate aerodromes, for nearly all the eggs by force of circumstances were collected in the selfsame basket. In one short period of less than a quarter of an hour, two-fifths

of the flying personnel disposable for Home Defence had been placed out of action for all time, and the actual equipment had suffered in only slightly less a degree.

It will not be necessary to portray the subsequent scenes of rescue, identification, and the gradual, long-drawn clearance of the pile of human and mechanical wreckage. It extended over many days and nights and the work was frequently interrupted, especially during the hours of darkness, by renewed alarms. The workers moreover, wearing masks and special clothing against the gas which had saturated the ground in the locality, were unable to put forth their best efforts and in addition they were insufficient in number.

The place was avoided as a plague spot and volunteering for the job of clearance and rescue was by no means active.

Another reason for the scarcity of labour was that trained helpers had their hands full in many other places simultaneously in the ensuing days, for even on the very afternoon, an hour later, of the Hendon holocaust, another disaster, as great in magnitude though less in actual military significance, took place below the surface of the ground.

On Saturday afternoons passenger traffic on London's Underground Railway system does not reach the week-day peak height when the workers have finished for the day and seek their homes. On those occasions it has been estimated that as many as a half-million persons can be in transit at one time.

Nevertheless, at the week-end there is a great coming and going in the early evening hours. Amusement seekers from the suburbs form the greater part of the incoming body. They are bent on visits to cinema houses and arrive in good time to eat first and have a look round. A large number of residents also take short journeys for the mere purpose of getting about.

Outgoing, are those whose employment is late by nature of its description, workers who like to see a picture before they go home, sight-seers in general and suchlike.

It does happen on occasion that trains stop in mid-tunnel by reason of some mechanical breakdown, and those who have experienced a stoppage of the sort describe it as vaguely alarming, as being a little like rats caught in a trap. But the all-necessary ventilation fans never cease, on these occasions, to revolve, and as long as the air is good to breathe nothing, they think, can be very wrong. They are reassured by the train attendants and if the lights should also fail there is a sufficient battery supply on board. If the delay is likely to be long they move off down the line to the nearest station ahead or back and pursue their journey in the open air. Every possible contingency is provided for and actual danger is decried.

Let it be presumed that on this particular Saturday afternoon an average of about a quarter million people were in transit in the Underground system of London. The total number will never be accurately known because a great many people forced an entrance from outside, remembering the air-raided lessons of the Great War, as soon as it was hinted abroad that danger was in the air.

Lots Road Power Station, situated in Chelsea, near Cheyne Walk, supplies electrical power for the London Passenger Transport Board. It is not connected with the "grid" system of the Central Electricity Board. In consequence should the dynamo-houses be damaged or destroyed the railway systems dependent on it for current would come to an immediate standstill and congest all other possible means of getting about. the result would be a wide disorganization of London life, the effect of which would permeate to every calling.

It is doubtful, however, if the master-minds in the enemy

WAR OVER ENGLAND

country had this latter effect principally in recollection when the destruction of Lots Road Power Station was ordained. The unerring blow at Hendon showed a fine discrimination as to the crippling possibilities of a well-chosen objective for attack. In the one case it was the classes which had suffered, in the other it was to be the masses. It was obvious that the geography of London and the ways of Londoners had been closely studied to produce a stunning surprise effect at the very outset of the business, and well did the results obtained fulfil the intention.

At 5 p.m., an hour after the Hendon attack, a similar formation of eighteen machines flying at much the same height came in as before, traversed the city overhead from East to West and blew up the Lots Road Power Station. That is the literal definition of what took place. The place was blown to pieces as surely as if a gunpowder train had been laid and fired with a slow match.

The bombs employed weighed a ton or more and each machine dropped one with excellent aim from the low height at which it flew. Having accomplished the material destruction to their satisfaction they then drew off westwards for a sufficient distance, reformed in single line ahead as geese go over in the gloaming, and returned with throttled engines to put the finishing touches.

These consisted of a mixture of small incendiary and gas bombs. The former were hardly necessary, for the high explosive had succeeded at once in setting fire to the whole spread of buildings, including the feed pump basement, the ash-track annexe, the boiler house, the turbine room, and the high-tension gallery and control office.

The latter, however, were highly effective, the first whisper of "gas" stemmed the rush of people from all sides who were gathering in human curiosity as soon as the sky was clear, and

prevented any attempt at salvage or rescue until, twelve hours later, the precinct was little less than a charred and twisted ruin.

Such was the destruction wrought above ground. But below, in mile after mile of tunnelling, seventy feet in places beneath the surface, scenes were taking place which resembled a mining disaster on a stupendous scale.

Here is an account of what happened in his vicinity from a passenger professionally accustomed to weigh words well and guard against overstatement.

"My name is Young; Christian names, George Henry. I am aged 35 and a lawyer by profession. I had been at Wimbledon, watching the Lawn Tennis Championship in the late morning and afternoon. At four o'clock I left for my chambers at Gray's Inn to finish some work. After much trouble I secured a taxi and had myself driven to the Hammersmith Tube. There I took a ticket to Holborn. The time was exactly 4.50 p.m.

The train was fairly full when I got in and was crowded before it reached Hyde Park. At that station more passengers were waiting than could be taken on, and we moved out packed like sardines. The reinforcement was from the Park where a largely attended anti-war meeting had been held.

"About half-way to Green Park Station there was a flash of greenish light followed by complete darkness. All the train lights had gone. The train itself continued, though diminishing speed, as if it were carried along by its own momentum. Suddenly, it was pulled to a halt by a sudden application of the brakes which jostled the strap-hangers and made it thoroughly uncomfortable for all inside.

"There was dead silence except for a shuffling to regain a comfortable position and a few murmured requests to give way an inch or two if possible from the overcrowded. The silence was extraordinary after the preceding roar and rattle and the rush of air.

"The conductor, carrying a flash torch attempted a journey of reassurance from carriage to carriage, but gave it up as hopeless, asking instead for the word 'no danger' to be passed along and that the lights would be on in a minute. When the lights did come on, from the battery supply, people saw each other's faces and realized that the fear they felt themselves was somehow common to all. A woman at the end of my carriage suddenly shouted, 'I can't breathe,' and went off into hysterics. The air had indeed become lifeless and myself, I was clammy with sweat. The next thing was that a man started up and shrieked, 'My God! The ventilation's stopped. We shall suffocate.' At that several people lost their heads and began to batter at the sliding-doors crying 'open up.' But the conductor, jammed in the end coach, could not reach the actuating key even if it had been possible to let people out on to the line.

"The noise of hammering and the crash of falling glass came from neighbouring coaches. Unable to endure the stifling atmosphere passengers were helping themselves to what they thought fresh air, and soon people around me were doing the same. There was momentary relief, but panic was rapidly setting in, and several people were down and being trodden on. The air was well filled with shrieks of hysteria, of pain and of protest.

"I had been in such tight corners in the War and elsewhere, and knew the best thing to do. I stood as motionless as possible behind the semi-partition which screens the double sliding-doors, only concerned not to be torn from my holding. My intention was to be the last out of all and to save my strength. There was no question of helping the weaker or the women. No space existed in which to do it. Later perhaps, if things quieted down, but not while panic ruled.

"Meanwhile, as I heard later, the conductor had operated the cut-out, in case the current came on again, and opened his end door. In this way a thin trickle of people emerged on to the line and started feebly to stagger along in the stifling closeness. But when, in some way or other, the occupants of the

other coaches became aware of this safety exit they behaved like demented beings. Not even an American football scrum gives the slightest idea of what ensued. The stronger fought their way furiously, brushing aside with blows all who stood in their path. Many were projected on to the jagged remnants of the window panes and badly cut. The struggling raised the temperature to a super-heat and further exhausted the air.

"How long it went on I cannot say, for I sagged into unconsciousness where I stood. But my corner position had saved me from being crushed and when I came to I found my limbs were whole. The lamps were then giving only a feeble glow, owing to the exhaustion of the batteries I presumed. In the obscurity I could make out the inanimate forms of those who had been my fellow-passengers, lying around in positions of awkwardness which I knew well meant only one thing—death.

"I do not well remember the rest. Step by step, and painfully, I must have cleared coach after coach until I clambered down on to the line. Vaguely I remember that each of them presented the same appearance, as of a box of broken dolls, seen in the feeble lamp-glow; the rest of the journey was in darkness, with frequent stumblings over still and prostrate forms. Before the end I was met by a rescue party and conducted to the surface. I awoke in Hospital."

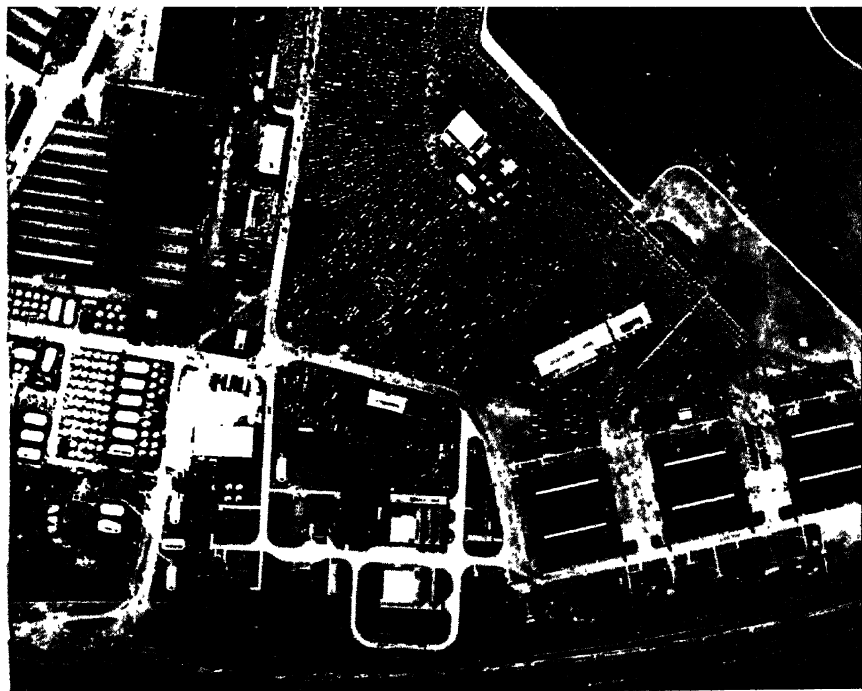
CHAPTER TWO

THE DOCKLAND ATTACK

FOR several years books and articles had been appearing descriptive of the overwhelming effect of surprise in the case of air attack. Now it had been put to the proof. By a dual stroke, deftly administered, Germany had created chaos throughout the length and breadth of London. The Services had lost many of their chiefs, and one in particular, the Air Force, without striking a blow, had been seriously weakened and had suffered loss in personnel and equipment which would take weeks of factory energy and months of training to make good. Parliament and ministerial ranks had likewise suffered, and the leadership class of society had been cruelly thinned.

The destruction of the Power Station had resulted in the deaths underground of eighty thousand persons, serious injury to half that number in addition, and nerve-sickness to nearly all the survivors.

The rescue work took a long time. Even had current been available trains could not run with the fairway littered as it was. But the fans were got to work again and an auxiliary lighting system was soon available. The line was cleared by hand-pushed trolleys and the coaches of the stationary trains far and wide over the system were unlinked one at a time and run in each case to the station ahead where the bodies were brought to the surface. Work proceeded day and night, for



the helpers were to a certain extent unaffected by what went on overhead. They could labour detachedly and they were not necessarily hampered by masks and gas-proof clothing.

London was a dumb city in the late daylight hours of that Saturday in June. In full accordance with the enemy's intention, and in fulfilment of his carefully prepared scheme, the metropolis was stricken from end to end by a level sensation of woe. Those abroad wore a dazed expression as if partly under the influence of an anæsthetic.

This is how a citizen describes a foot-journey he made in the West End at about 8 p.m. "The concourse in the streets was not 'great,'" he says.

"An irregular bus service continued, but there was very little patronage. A surprising number of people had produced gas masks and wore them round their necks at the ready. Some even appeared in the rubber and asbestos overall suiting which the Home Office had recommended. But it was evident that a large section of the populace had obeyed the issued instructions and were ensconced indoors in the prepared air-proofed space which every house of a certain size and over had been ordered officially to maintain. A pathetic sight was children with gas masks round their necks.

"The provision shops were driving an active trade, and small knots of people were collected outside the radio shops listening to the stream of B.B.C. governmentally inspired announcements.

"Down the Edgware Road an endless stream of ambulances, and vehicles improvised as such, conveyed injured survivors of the Hendon disaster for distribution to the emergency wards of the various hospitals.

"Around every tube exit a large space had been picketed off to allow freedom of ingress and egress for those engaged in the task of rescue. Buses stripped of seating accommodation on both decks took away those alive, while dead carts in the form of commercial vans, conscripted for the occasion, bore

off to the mortuaries and to public buildings assigned for that purpose, those who had no further need of human aid.

"Opposite the National Gallery a man stood on the unoccupied monumental pedestal and preached repentance for the Judgment Day which was at hand. No one interfered with him, and few listened.

"In Piccadilly Circus the old, crack-brained man still stood on the curb swallowing his ping-pong ball and making it reappear from behind his ear.

"Small religious groups formed here and there at street corners and sang hymns.

"It was noticeable that pedestrians slunk along rather than walked, as if bearing a physical burden. Their faces were downcast and it was rare to encounter two walking together. The expression of the women met with was fixed in horror and many silently wrung their hands. London was under a pall."

Taking into account the disorganization in high places, the emergency measures for dealing with the immediate situation were both sound and prompt.

The B.B.C. became at once the official mouthpiece. The relay stations and services were forbidden to tune in to foreign propaganda, and the Langham Hotel was established as the headquarters of the censorship. Listeners were exhorted to listen only to the British Broadcast as the sole authoritative pronouncement and the only means of carrying out the citizenly duty which it behoved all to adhere to.

In this way London and the country at large was apprised of the dual disaster in sane and sensible fashion. The official utterance was calm, cool and collected, and did much to allay the despair which had already begun to prevail.

It was announced that Martial Law was proclaimed, that the Fleet, Army and Air Force reserves had been called up, and that the Air Defence was ready to meet another attack whenever it might be delivered.

THE DOCKLAND ATTACK

The bombing squadrons, it was given out, would fly the next day to their stations in France in accordance with the schedule of movements long prepared, and from there, in conjunction with the French Air Force, would conduct reprisal attacks unceasingly.

Parliament would assemble in the forenoon of the next day, Sunday, to pass swiftly into law whatever short-drawn Acts were deemed necessary for money credits, for emergency powers, and for the conscription of industry.

All private individuals and their families, who were in a position to comply, were requested as a patriotic duty to leave London for the country, using private vehicles and the ordinary train service.

These announcements, coming in a steady stream from 8 p.m. onwards had a reassuring effect. People felt that their leaders were at work on their behalf. They had a centre point to turn to and no longer groped blindly. The broadcasting served, moreover, to stem the effects of flying rumour and to reduce the counsels of despair. It was a triumphant vindication of the British system of broadcast.

At 10 p.m. while it was yet light, the following announcement was made:

“The public are reminded that there is a strong possibility of further attack during the short hours of darkness. They are reminded that the tubes are not available for shelter, owing to the rescue work which is still in progress. Street lighting will be extinguished in half an hour’s time, pending proper arrangements for reducing it to the necessary minimum. No house lights must be shown and people are ordered to stay indoors. Police and military patrols will be in constant movement with orders to enforce these instructions. The rescue work now taking place must be conducted without recourse to electricity and should a night attack eventuate no light whatever must

be shown. No warning arrangements are possible in the short time at disposal."

The moon was at half. Since darkness London lay like a City of the Dead. Police cars with loud-speakers drove up and down and in and out on the watch for a breach of regulation. The measured tread of the patrols sounded from the pavements. Within doors people cowered with the sense of doom impending. A vast number of the households, both of poor and rich, were incomplete. The heads of families were missing, as also the members, either trapped in the Underground or at Hendon, or on special duty as constables, with the ambulance corps, or in Scout headquarters, ready for service.

A great deal had been done in the short time at disposal and most of the quick organisation was due to the official hints and recommendations with which the B.B.C. had interspersed their other weightier announcements.

Some few minutes before midnight pandemonium broke loose. Listeners within doors, acting on the instructions of the Home Office Air Raid Precautions Department, betook themselves to their gas-proof chambers and sat out the remainder of the night in an agony of expectancy that the end of their world was at hand.

Three separate sounds were distinguished to their strained hearing, muffled or distinct according to distance but easily recognizable.

There was the fairly familiar sound of anti-aircraft gun-fire which came continuously, increasing and decreasing with a curious rhythm. The accompaniment to this, like a treble to a bass, was the noise of the shell bursts, staccato and crisp, which mingled with the other in an echo-like sense. And lastly there was that dull, hollow, tearing reverberation, followed on each

THE DOCKLAND ATTACK

occasion by a shiver and vibration as of an infant earthquake, which was familiar to all who possessed experience of the air raids in the Great War. It was the noise of the detonation of high-explosive.

Many people, modern flat-dwellers, principally, whose curiosity overcame their discretion, or whose valour was that of ignorance, went to the roof to see for themselves. The following is excerpted from the description of a newspaper man who was one of them.

"It was difficult to tell the precise locality of the attack indoors, but when I got to the roof everything was plain. London eastwards of the City was being bombed. The telephones were reserved for emergency calls and so I could only guess at the time that dockland was the enemy's objective.

"It was 23 minutes past midnight. Searchlight pencils were stabbing the sky and darting about in an agitated fashion as if uncertain where to alight. The personnel were probably out of practice. Now and again a hostile bomber was held in a ray, at which time the anti-aircraft fire became more rapid. But the shell bursts appeared wide of the mark, and I did not see a direct hit.

"At ground level the spectacle was appalling. The whole area was brilliantly illuminated by numerous conflagrations, and the smoke which ascended reflected the red of the flames. Further eastwards still there were other detached fires, burning with a black smoke, the origin of which I was at a loss to determine. The flames nearer at hand were leaping so high, and the smoke pall hung so directly above, that I might have been witnessing a volcanic eruption.

"Soon there was quiet. The enemy had departed. A light breeze blew up and conveyed a variety of smells to my nose from the burning quarter. I had not my mask with me and fearing the effects of gas I went inside again. Fire-engines and ambulances rushed to and fro for the rest of the night."

Few people went out and about the next morning unless their necessity compelled. It was luckily Sunday and to stay at home involved no departure from routine. Those astir were largely composed of travellers from the London termini intent on putting the capital behind them. To these must be added long processions of private cars, piled high with household freight and filled inside to overflowing, the occupants of which had the same object in view.

The B.B.C. had made a bald announcement in the early hours, promising to elaborate it as soon as details were to hand, to the effect that the London docks had been seriously damaged in the overnight raid, and that Hull, Newcastle-on-Tyne, Liverpool and Bristol, had been similarly visited. Those also listening in who lived in the small towns and villages, in sparsely populated districts, in the fenlands, moorlands and in solitary wayside homes, regarded their unchanged surroundings and each other with amazement, almost unbelieving that the thing had happened, that the country was at grips with a relentless foe, and that war in added horror had returned.

The Sunday newspapers had not been permitted to publish more than a verbatim report of the B.B.C. announcements in their news columns, and otherwise contented themselves with editorial fulminations against the dastardly nature of the attack and the framing of questions which were already in everybody's mouth.

How had it happened, the general tendency of the writing ran, that the surprise could have been so complete? Did not England's diplomatic agencies, her Secret Service, and her friendly neighbours suffice to give warning of the impending blow? What of Paris and of the French? Had the one been struck as well, and the other paralysed to inaction? What of the Fleet in the Eastern Mediterranean, of the army in those

THE DOCKLAND ATTACK

parts, and of the Air Force units there too, now no longer available for Home Defence?

They beseeched the public to remain calm, and to observe the spirit and letter of the edicts. And they demanded that the Government should take the people into their confidence, withholding no information, however depressing, which was not of actual military service to the enemy. Only in this way, the leader-writers asseverated, could a panic reaction be stemmed and the masses be inspired with a united purpose to take up the challenge and deal blow for blow.

The news offices had gone to press too early for news of the dockland attack to appear in their morning issues, but at 9 o'clock, simultaneously with the second B.B.C. announcements regarding it, and two hours before the extraordinary meeting of Parliament, single sheets were being sold containing censored accounts in amplification of the broadcast.

Gradually it was borne into the minds of men that a third disaster of the first magnitude had occurred, this time aimed at the food supply of the country, and the intelligence that ten hostile aircraft had been brought down by anti-aircraft fire, together with a further five in air combat, with negligible losses to the Home Defence, did nothing to allay the national state of alarm. What had really happened was this.

In the intervening years "Greatest London" had evolved itself from a "Greater." A vast number of new industries, housed in newly erected factories and non-dependable on a near-at-hand coal supply, had grown up east and west and south and north. Greatest London covered an area of over 2,000 square miles, with a population verging on ten millions, and extending roughly from Henley to Tilbury east and west, and from Horsham to Ware north and south.

All this had reacted on the Port of London, which was now

entering and clearing a ship tonnage of 65 millions, with a daily up-and-down traffic of an average of 200 ships.

The curious network of waterways and basins which comprise the 4,000 acres of London's dockland, from the Tower to Tilbury Fort, are topographically impossible to grasp in their full significance except from the air. But to the observer in an aeroplane their odd-shaped areas, and their curious ramifications, stand out like the boundary drawings of a living map.

Firstly, just by Tower Bridge, are the London and St. Katharine Docks, with the warehouses close at hand, handling tea, wine, wool, sugar, rubber, etc.

Next come the Surrey Commercial Docks, three times bigger, which deal with softwoods, grain and Canadian dairy produce.

The West India and Millwall Docks come next, lying like a necklace across the landward side of the Isle of Dogs, and handling hardwoods, sugar, grain, fruit and wood pulp. The granary in Millwall Dock is its special feature. Next comes the small East India Dock.

On the northward bend of the river stand the huge Royal Victoria Albert and King George V Docks which are specially equipped to unload frozen and chilled meat, grain and tobacco. Vessels up to 30,000 tons can be accommodated.

Lastly, the Tilbury Docks, 26 miles below London Bridge, are used principally by vessels plying on the Far Eastern routes.

The total water acreage of all the basins combined is 700, and they are as undisguisable from the point of view of air attack as the river itself.

Over and over again it had been pointed out in Parliament, in the Press, by book-writers, and at meetings of the Port of London Authority, that dockland lay wide open to air attack.

THE DOCKLAND ATTACK

It was contended that a successful bombing raid on a large scale might be irremediable in its effects, that it might mean such dislocation of the provisioning system of London, on which the Capital was utterly dependent for existence, as to force the hand of Government to ask for an armistice.

Anti-aircraft gun and searchlight stations had been increased in the vicinity, and the patrolling area of the Air Force fighters and interceptors had been carefully calculated for its air defence. There seemed nothing else to be done and the agitators had, perforce, to rest content with the official assurance that all possible measures had been taken for the security of this vital area.

The Service leaders must, however, have known that, by night at any rate, and even if forewarned, a large percentage of attacking aircraft were bound to reach their objective. How much more certain was it, therefore, on this occasion that the attack should succeed?

It was expected too late for one thing, and for another it followed too closely on the shattering blows which had been dealt in the later afternoon. The Territorial anti-aircraft units of defence mustered to the best of their ability, and so did the Air Force squadrons. But time was too short for the pieces to fit together according to plan even if the process had been smooth-running. It was far from that.

The hurried summons for duty had caught many of the Territorials far afield with their families and friends and on Saturday-afternoon excursions to the seaside towns. They answered as best they could the broadcast instructions to return at once and answer their names at roll-call, but the scattering was fairly widespread and they dribbled in to the various headquarters in long tailed-out fashion which seriously hampered the standing-to. A good few had also been involved in the

Tube and Hendon disasters and the muster was very much under strength when they moved off to their stations at dusk.

At the aerodromes a different state of things prevailed. There it was known, and fully realized, that a makeshift policy must be made to do. Fortunately the Air Force Officer Commanding the Fighting Area had escaped injury and, although his command had suffered most serious loss both in equipment and personnel, he was able by dint of sheer driving energy to have ready a reasonable percentage against the eventuality of night attack.

It was the Listening Posts which were the most woefully deficient. A few were got into place, but instead of the concentric half-circles which should have ringed London from the coast inland, there were large gaps in the organization which prevented the efficient working of the system.

It is easy to apprehend, therefore, that the Air Defence arrangements to meet or forestall the expected night attack were a patchwork affair as regarded London, the focal point. With regard to the other places assaulted on the same occasion, Hull, Newcastle, Liverpool and Bristol, the surprise effect of the late afternoon raids was even more complete. In any case they were thinly protected, for the Air Defence of Great Britain was concentrated chiefly to foil invasion over London and the Home Counties. Moreover, the Air Force Units dispatched to Egypt to confront the Italian Air Force in Libya, and generally strengthen the British forces in the Eastern Mediterranean, had been selected, where possible, so as to denude the London Defence as little as need be.

In consequence, apart even from the losses sustained from the Hendon attack, the great seaports which also suffered that night had little but their ground defences to rely on.

The state of affairs has been described in some detail as

THE DOCKLAND ATTACK

serving to show how right were those who claimed that a well-armed first blow might easily result in a knock-out.

A statement of the damage wrought will now follow. In general terms it resulted in the bottling up of the Port of London. In human analogy Greatest London resembled an enormous eater who suddenly found he could no longer swallow. Being fat and overfed in the past he could sustain life for a time by going without his accustomed meals and relying to a small extent on artificial processes of feeding. But from that moment he was a sick and dwindling man, and to the acute discomfort of semi-starvation was added the misery which his imagination conjured up of worse in store.

Terrible destruction had been done. A hundred and fifty bombing aircraft, in relays of thirty had come and gone during the fifty minutes which the attack lasted. A hundred and fifty ton-weight bombs had been dropped with telling effect on the shining target, lit up with a stage brightness of illuminations by the warehouse fires, the burning quayside cargoes, and the setting on fire of many ships as well by thermite and ellite bombs.

These latter were literally showered down in thousands in light-weight packages and wherever they fell there a firepoint was immediately raised. In the case of ellite, when it hit the water in the dock basins it emitted a poisonous gas.

In addition lethal gases, such as chlorine, phosgene and "mustard gas" were used in great quantity, and in a new and unexpected fashion. They were parachuted slowly earthwards, the parachutes set to open at a certain distance from the ground. During the descent the containers revolved at high speed with a whistling sound and threw off the contents by centrifugal force. The gas was widely distributed in this way, except when the cylinders landed.

But the moral effects of this startling phenomenon were so great that the dockland area was deserted and the fires spread unchecked. The great granary at Millwall, among many other huge storage places for food and commodities, was completely burnt to the ground.

The part which the large high-explosive bombs were intended to play was soon apparent. They seemed to have been aimed more particularly at the water surfaces of the dock basins, and where the aim was true a double destruction was wrought.

At the Surrey Docks, for instance, where the nine irregularly shaped basins average rather less than twenty acres each in superficial area, the detonation of the ton-weight bombs was tamped by the walling and the hard bottom. The explosion not only stove in all shipping alongside but blew out the dock gates, so that when the tide receded the basins ran out and the wreckage was completed in that way.

But the same thing had happened universally throughout the dockland area. The shipping was either destroyed or immovably jammed. The warehouses were burnt to the ground, and the cargoes on the quay in process of warehousing were reduced to smoking embers.

At Tilbury the destruction had been equally complete. Here the bombers had had even an easier time for the Tilbury Docks lay below like a bull's-eye on a Bisley target, impossible to miss. In addition a subsidiary attack had been made against the vast accumulation of oil-holders which studded the north shore of the river in that vicinity, like a field of mushrooms. Low-flying aircraft had done this mischief by means of small thermite bombs which they had sprayed from overhead, weighing not more than half a pound. Hardly any of the oil-reservoirs escaped destruction.

THE DOCKLAND ATTACK

It remains to relate in a few words what happened at the four great ports of trade in the north and west.

Thirty bombers in each case had been relegated to their destruction and exactly the same means were employed as in the former case. Hull and Newcastle, with remembrance no doubt of experience in the Great War, were on the alert and had darkened their precincts. Such was not the case with Liverpool and Bristol, which cities, in spite of warning, had been slow to realize that the range of modern aircraft placed them now under the same danger as East Coast ports.

But it would hardly have mattered much in any case. Air navigation, owing to the impetus given to it by the civil transport lines, was a highly advanced science. The stars were out to fly by and the situation of the cities, with the Humber, the Tyne, the Mersey and the Bristol Channel as guide-posts to direct the hostile aircraft, made location a simple matter indeed.

In each case the wharves and docks were the principal objects of attack. At Bristol the City Docks, six miles up the Avon, the Royal Edward and Avonmouth Docks at its mouth, and the Portishead Docks, west of the river entrance, were heavily attacked with immense destructive effect. Warehouses containing grain, cereal products, frozen meat, sugar, provisions of all sorts, and feeding-stuffs were largely destroyed, the docks were seriously damaged, and shipping alongside was holed and sunk. The oil-refineries, and the storage places for petroleum and petroleum spirit were particularly sought out and attacked. Also, the loss of life was considerable.

Liverpool fared even worse. The docks lie on both sides of the river Mersey and have a linear quayage of little less than forty miles. Straight up and down flights like this provided much easier targets for the bombers than either the congerie

of haphazard groupings which comprise the dockland of London, or the detached docking areas of Bristol. At Liverpool the grain, oil, cotton and sugar-storage buildings suffered most, especially the former, but the timber stacks and the fruit and provision depots underwent serious damage.

Newcastle-on-Tyne was a much less easy target owing to its distance from the mouth of the Tyne and the conglomeration of plants on either bank which tended to disguise the approach. Nevertheless the attack was far from a failure. Wheat and grain stores were destroyed and also petroleum storage. The huge plant of Imperial Chemicals opposite the city was burnt out, and, by the unluckiest of mischances, both the Stephenson High Level Bridge and the King Edward VII Bridge over the Tyne were demolished by large high-explosive bombs.

It remains briefly to recount the fate of Hull, the third port in the United Kingdom and the chief port of North-Eastern England; an important centre of the flour-milling industry; an importer of grain on a huge scale; and the traditional air-raid victim, outside London, of the Great War. Here the attack was signally successful.

The ten docks, with a water area of 210 acres, and the shipping they enclosed were bombed to destruction and the incendiary bombs completely burnt out the warehousing. From the viewpoint of rapidly handling cargoes, and, in fact, of carrying on ocean commerce of any sort, Hull had been wiped off the map of England. Its wonderful equipment of modern appliances, cranes, grain-elevators and suction apparatus, which has earned it the reputation of being the cheapest port in the United Kingdom, was reduced to a twisted mass of scrap metal. In a more complete sense, if possible, than the Port of London, Hull had been destroyed.

CHAPTER THREE

PARLIAMENT MEETS

PREVIOUS to the meeting of Parliament, unprecedented on a Sunday, the B.B.C. continued to make spasmodic announcements, interspersing official accounts of what had taken place, duly censored beforehand, with instructions as to general behaviour in the crisis on the part of the populace and on behalf of law and order.

About 9 o'clock a mass movement set in from the east, north, and south of London towards Parliament Square, only the residential districts of the west being unrepresented. It was not a panic-stricken process in any way. The people, although moving steadily, were unhurried and seemed to be informed with a deep purpose. Among the dense throngs leadership "knots" shouted a slogan which was occasionally taken up in vocal chorus by the mobs at large.

"We want the truth," was what they shouted, and the authorities were non-plussed in what way to answer the demand. No one knew in what way the movement grew, much less the marching hordes themselves. It was evidently spontaneous, and possibly the result of desperation following on a complete realization that inferno had broken loose.

Rumour was also rife, in some fashion of leakage, that disaster had overtaken the British forces, land, sea and air, in the Eastern Mediterranean.

These things could not be borne without enlightenment.

The people felt that the bad they knew could not be worse, and the result was this determined impulse not to be kept in the dark. The truth must be shaken from the throats of statesmen if they would not speak otherwise.

By 10 o'clock the Westminster approaches, and St. Stephen's Green itself, were black with humanity. Trafalgar Square, the Mall, the Horse Guards' Parade, the Embankment by the Houses of Parliament, Westminster Bridge, Victoria Street and Millbank were so crowded that the movement came to a halt. Motor traffic was long since suspended. Marooned buses forlornly overtopped the masses and, in Whitehall, the Cenotaph, like a chunk of chalk cliff from the Channel coast, took on a deeper significance than ever before.

Neither at halt nor on the move was the mood of the crowd bellicose. Only the deep-throated roar of "We want the Truth" betrayed the fact that it had business on hand. Outside the Admiralty, the War Office, in Downing Street, and by the entrance to the House of Commons, the cry was more persistent and developed a sing-song notation in which there was nothing of the jocular.

With commendable resourcefulness loud-speakers had been brought into action at many open windows. In this way the masses were implored to disperse. They were told that already, while they were assembling from afar, the work of rescue in the Underground had been seriously interfered with. They were warned that the proceedings in Parliament would be delayed by the inability of members to reach their seats.

To all this there was no response and certainly no visible result. The ranks were far too serried to disperse at a mere word of command, and far too earnest to relinquish their purpose. Like a bee-swarm there had to be instinct behind their behaviour, and the instinctive impulse was quite unconnected

with the voice of authority. It had to spring, when it did arrive, from a law of Nature's working. Mass emotion was in the ascendant.

Legislators, whenever recognizable as such, or who announced their identity, were assisted on their path, and everywhere they were adjured by those with whom they brushed shoulders that nothing but the plain, unvarnished truth would do.

In this extraordinary atmosphere of purposeful constraint the House opened, and as it did so there was a lessening of the outside tension. The popular demand had been complied with. There had been a hurried consultation between the Prime Minister and a few of his Cabinet colleagues, and amid a hush of expectancy which was breathless in its quietness, a solemn promise had been broadcast to the effect that nothing would be withheld from public knowledge excepting only that which would be of direct informative value to the enemy. With this single proviso, it was further stated, a running commentary on the proceedings would be at the disposal of all listeners. The crowds were again counselled to disperse, with these additional words: "For safety's sake it is necessary. Further daylight attack must not be ruled out of consideration. Disperse to your homes in quiet and orderly fashion, in that way assisting those in responsible charge."

The appeal this time was of avail; a general trend of movement outwards was at once observable; and although many people remained in the vicinity magnetized by the overwhelming importance of the occasion, the climax had passed and even the stagnated motor traffic could pursue a crawling progress. It was not an ugly crowd.

Inside the House, the Prime Minister commenced by a nobly worded, brief denunciation of the outlaws from civilization

who had planned and carried into effect the crime against humanity.

He next, in short words, deplored the loss which the House had sustained in its ministerial ranks and among all parties.

"Even now," he went on to say in a voice deep with emotion, "we are in the dark as to a complete list of those among us who are sufferers or who have lost their lives."

Proceeding, in a hushed House, he stated that new appointments would be made at once, and that, in the Service Departments of Defence, the gaps caused by casualties were already being repaired as far as possible. As regarded immediate measures, the Fleet, Army and Air Force Reserves were being called up. The Territorial anti-aircraft units, gunners, search-lights personnel, and listening-posts, would be at their allotted stations throughout the country in the course of the day, fully equipped and organized according to plan. The available Bombing Squadrons were even then proceeding to France in compliance with the pre-conceived arrangements came to between the two General Staffs.

The gas-mask distribution to city- and town-dwellers was now in process and the decontamination squads were ready at their posts.

Pressed for further information concerning the day and night attacks which London and the country had already undergone, the Prime Minister replied as follows:

At Hendon, he said, and below ground, the work of rescue was nearing completion, but actual clearance in both places would be a matter of time. The voluntary organizations had shown magnificent response. Both at Hendon and at Lots Road the gas had been cleared away and the work was proceeding more briskly with the removal of the necessity to wear masks and special clothing. The enemy, however, had not

omitted to employ a peculiarly dastardly form of weapon which was highly demoralizing to those employed. This was the use of delay-action bombs, which lay among the debris and which had already occasioned extra casualties, though few in number.

As regarded the damage done during the night, it was of very large extent. The London docks, and the docks at the four other places attacked were at the moment unusable as such. The position in this respect was extremely serious. There were, it is true, alternative ports at which shipping could make entry, but the facilities were not extensive for dealing with an extra mass of cargo and adaptation would take time.

A great deal of shipping had been damaged or destroyed and already orders had been issued to prepare for service the many units of the mercantile marine which had been laid up in rivers and estuaries for lack of trade. Crews would be readily available.

He confessed he might, through force of habit, be putting a good face on things, for the blow had been severe. Full details were not yet to hand, but enough was known to leave no doubt that the aim had been primarily to cause an immediate food shortage.

In this the enemy had only too well succeeded. Many granaries had been completely burnt out, and the machinery for off-loading grain from ships damaged beyond repair. Another necessity which had suffered in the same way was chilled and frozen meat in store. Unhappily, as regarded grain and cereals, stocks were exceptionally low and the home-grown supply could not be available for months to come. Food restriction measures would be immediately necessary for the rationing of the populace and the prevention of hoarding, and this would apply to all edible commodities. Measures to

deal with this and other emergencies, to do with transport by road, with movement after dark where populations were dense, with pillage of premises by evil-doers, with public entertainment, and such like, had been hastily drafted. They would be tabled before the House rose, and members would be asked to cast a blanket-vote, passing them into law at first, second and third readings taken simultaneously. Among them would be an indemnity Bill to cover illegalities and suspension of the Rules of Parliament.

Before proceeding to disclose the intelligence received from France, and from the Admiralty regarding the forces in the Eastern Mediterranean, it was his duty to make an announcement which he feared, would come as a painful surprise to the House and to the country.

He had been advised that London was no longer advisable as a place of meeting for Parliament. Several considerations conduced to this condition of affairs. The chief among them was the necessity for a calmer and more detached atmosphere for deliberation. Secondly, and equally important, there was the danger that renewed attack, especially by night, would subject members of the House to risks which they would not be justified, bearing the nation's interests at heart, in running.

Accordingly, as and when the House was called, a new venue would be secretly disclosed in each case, and on no account must information as to the precise locality be given public revealment. The House would remain in Session but the sittings would not be regular. The Cabinet would be forthwith expanded to form a Caucus, representative of both parties, for the purpose of dealing with the nation's affairs in the intervals between the sittings of the House.

The venue for the Cabinet meetings would also be variable and outside the Metropolis.

The Prime Minister had spoken for less than an hour in a Chamber charged with excitement kept under control. He spoke wearily, and it was evident that he laboured himself under the stress of intense grief. But his words were well chosen, and his meaning behind the Parliamentary utterance was clear to all. The hour was at hand after which England would cease as an Empire or emerge triumphant as a result of ruthless war.

He concluded by begging the forbearance of the House in refusing facility for an ensuing debate.

"Time is too short [he said] for verbiage and division of opinion. We are in the grip of a great necessity. At the moment our course is plain. It is to defend ourselves at whatever cost and to see to it, meanwhile, that the circumstances of our population are bearable as far as the necessities of the occasion will allow. The choice lies between a surrender or a fight to the finish. I would not be standing where I am to-day and deservedly not, if I allowed the first alternative for a single instant to occupy my mind."

The Secretary of State for Foreign Affairs was the next to rise. Not taking the time of the House to explain the international situation, or in any way to absolve himself for failure in negotiation, he gave the House a résumé of cabled dispatches he had received from France during the last eighteen hours.

He explained that wireless communication had been interrupted by systematic jamming, and that messages to and from the forces in the Mediterranean, as the House would hear, had been similarly prevented. The information he imparted was of the gravest kind.

It seemed that Paris had undergone bombardment from the air, by high-explosive, gas and incendiary bombs, simul-

taneously with London, both in the late afternoon of the day before and in the night following. Over and above that, the principal cities in the Rhone Valley, including Lyons and Marseilles, had been attacked by an Air Force which had emerged from the Lombardy Plain. In either case the surprise had been complete.

The destructive effect of these wanton assaults had been immense. Appalling loss of life had resulted and the material damage had crippled all industries in the areas subjected to attack. It was evident from the tone of the messages that great confusion, not to say panic, had prevailed and was still prevailing, and he was sorry to have to admit that despondency could be read between the lines. The seat of Government was being moved elsewhere. Detail was lacking, but quite obviously our Ally had been dealt a blow commensurate with the heavy disasters which had overtaken England.

That was all he had to say at present, and the House would excuse his brevity and his lack of detailed information.

He resumed his seat and the House turned in painful silence to listen to the Minister. They were well aware of the difficulty of his task, for only since the beginning of the year had his Office been raised from an advisory and co-ordinating status to that of full executive responsibility for the three separate Services. The late realization of Air Power had occasioned the changes in the teeth of a united opposition, and on his shoulders now lay a burden which no man had ever borne before.

He, again, promised to be brief and only to recount the salient facts. But he did beg the House to bear in mind that the change over from Sea to Air power, which it had approved by its vote in January of that year, had been impossible of accomplishment in the time at disposal, and that in consequence

the only weapons available were those which had been thereby acknowledged to be out of date.

Alexandria, which was harbouring more than half the tonnage of the Royal Navy, had been directly bombed between 4 and 5 o'clock yesterday afternoon by the greater part of Italy's capital air fleet, her long-distance bombers. Malta had been simultaneously attacked.

In the latter case, Valetta, he regretted to inform the House, together with the Naval Dockyard, had been practically destroyed with great loss of life.

As regarded the Fleet at Alexandria, the prognostications of those who claimed extreme vulnerability from air attack for ships of war of battleship size downwards had been only too well borne out. He was advised that the Mediterranean Fleet was no longer in being. Although technically in constant readiness, a surprise attack of the sort, out of a peaceful sky, had not been foreseen and a percentage of the personnel were ashore on leave.

Nevertheless, the enemy Air Force, converging from Libya and the Dodecanese, had been identified in sufficient time for a moiety of the anti-aircraft guns to be manned, and an immediate recall signal had been given.

But the guns had been largely masked by a smoke screen, made by smoke-bombs on the water and low-flying aircraft overhead. The atmospheric conditions, unfortunately, had been ideal for such enterprise.

A considerable number of the enemy aircraft had been shot down. They were reported to have shown a death-defying form of bravery, and in some instances actually to have flown into the decks after being hit rather than alight on the water in the hope of rescue.

Details, again, were necessarily lacking. Many ships had

been sunk by the depth-charge effect of underwater detonation, and many had had their top hamper totally destroyed by high-explosives which had burst above. Large incendiary bombs had brought about fires. The bombing had been indiscriminate with the exception of the aircraft carriers which had been signalled out for special attack while the smoke-screen was forming and immediately sunk.

The whole operation had occupied less than an hour. The Air Force units ashore had taken the air without loss of time, but in their case as well the personnel was dispersed. A few combats had taken place, in which he regretted to say the fighters had not had it all their own way, but the enemy had departed before a proper plan of attack could be organized and their speed in flight was such that they could not be easily overtaken before they were beyond air range of the smaller machines.

The Minister sat down wearily and as he did so many members sprang to their feet to put questions. The Prime Minister interposed, asking permission of the House first to propose a financial resolution.

Shortly, he asked for 500 million pounds to be raised internally as a War Loan and the House acceded without a dissentient voice.

There was no debate. A blanket vote was cast overwhelmingly in favour of the Government proposals, and the Speaker intimated that the remainder of the sitting might be occupied in putting questions irrespective of the Order Paper.

The replies to some of the questions had an eye-opening effect both inside the House and to the millions of listeners outside. The wireless, either by means of receiving sets or by the relay service, was in practically every home. Not only townspeople and those who lived in community, but also the lonely farming families, the shepherd in his cot, and people living

miles from anywhere in mansions and in humble cottages, were straining their ears not to miss a syllable, what time their hearts lay heavy within them at the vista of despair which was being brought before their eyes.

The questions were put at random, each member who caught the Speaker's eye having only one thought uppermost which he voiced in turn for all—how the thing had happened—could it be endured—and what was to be done.

Unaccustomedly, there was no stalling of the questioner or obscuration of the point at issue. On this occasion there was no face-saving effort on the part of Ministers. No party question was involved and there was no idea of unseating the Government in office. In Parliament and out the nation was as yet united.

To the first order of interrogation—how what had happened had come to pass—several facts were pointed out in the series of replies.

The Air weapon, it was stated, was the most effective of all three when used in a manner of surprise because of its suddenness and the heart blows which could be dealt. Moreover, the most exact plans could be made in advance by means of a close study of the routine life of a people. Such plans could not easily go agley. People did not change their habits, their working hours, or their styles of habitation. The food and supply system of a country were unalterable except in an expanding sense, and the same could be said of the manner in which the millions got about. The nerve-centres and the stream of life which was strengthened by them; the food-centres and the bodies which they nourished; the arteries of commerce by which a nation was supported; these were always in the same identical place to be pinpointed against the day of attack.

WAR OVER ENGLAND

Neither armies nor navies can effect complete surprise, but an Air Force is always able to. The logical method of using it is to get in the first blow and make it as overwhelming as possible.

That was not to say that such barbarism should be condoned. It merely meant that barbaric races possessed the initiative of action whenever the stake they played for was thought worth while. Given the will to perpetrate such atrocity as had already been committed it was not a difficult thing to accomplish.

London was only 300 miles from the German frontier and Hull the same. By the use of variable taking-off places the distances to Newcastle, Bristol and Liverpool need not exceed 400 miles.

Adequate local defence against air attack, even without the use of the element of surprise, was a sheerly impossible undertaking, because the enemy could always be in full strength over the desired spot, whereas the defending forces must of necessity be widely distributed.

No miracle of achievement had occurred. The machinery of attack was all too simple.

As regarded the next question series, Britain's power of endurance, that had its psychological aspect as well as the material. In the one case it meant the people's will to war, in the other a continued availability of food and necessities, and both were inter-active.

Cruel blows had been struck and thousands on thousands of families, comprising all classes, were mourning loss. Hardship would be felt almost at once and the conveniences of life would be largely destroyed while the struggle continued. In addition there would be constant danger to life and limb, to be undergone by millions who had never been in danger's way before.

Under these stresses, and constantly policed by petty regulations for the better ordering of the life of a nation at war, murmurs might undoubtedly be heard and faint-hearted voices be raised to make peace on any terms.

For instance, it was now known that a vast destruction of petroleum and petroleum spirit had been wrought by the over-night attack on the ports. It would be necessary jealously to conserve what remained, and what was on the way afloat, for the use of the Services. Otherwise the energy of the Air Force and the Fleet might be paralysed and the country indeed lie prostrate at a conqueror's foot.

Oil-producing plant by the hydrogenation of coal and the low-temperature carbonization process did exist, but a year or more would be required before it could be expanded to a self-supporting extent unaided by import.

That would mean immediate restrictions on the use of motor-vehicles both private and commercial, and already an Ordinance was being drafted. The repercussion of that alone on people's habits, dislocating to supply and restrictive of movement, would be felt by every head of the population.

It was the Parliamentary Secretary to the Home Office, owing to the death of his chief, who was making these points, and he concluded with these words:

"I feel and know that millions are now listening to the broadcast paraphrase of the words I let drop. I speak to the noblest audience in the world, to my fellow-countrymen at a moment of grave crisis in our history. To them I say, as equally to this House, that they will take up the gage which has been thrown, that they will grudge no sacrifice, not even of life itself to free the world of detestable tyranny, and that they will count the continuance of the Empire and the freedom of their homes as worth all they have to give and more."

Replies to searching queries as to the measures in hand, and to be taken, for prosecuting the war were not forthcoming on the same scale of candour. It was pointed out that disclosure would be directly of service to the enemy in apprising him of the points to protect. The House could rest assured that between France and England the plan for such a contingency had been well laid. The possibility of war had been foreseen for long though not the actual moment of outbreak. The chief infamy of the enemy's action, apart from its inhumanity, lay in the fact that an interchange of notes on the points of variance had actually been then in process, and this had naturally contributed to a sense of immediate security.

There was no reason whatever in spite of what had happened, why England and her Ally across the Channel, together in a less intimate sense with that Ally's Allies further East, should not reap a full revenge for the dastardly nature of the attack and, believing in the justice of their cause, secure victory.

The proceedings at this historic Sitting of Parliament have been described at some length for the reason that their effect on the listening multitude outside was great indeed.

The news of the disaster in the Mediterranean came as a stunning blow. The attack on Paris and the Rhone cities, curiously enough, operated on the public mind in a quite different sense. It engendered a feeling that, at any rate, France was acting as a buffer, and that the enemy force was thereby divided instead of being exclusively directed against England. The sensation of loneliness in misfortune was reduced.

Moreover their Press had told them time and time again how the vacillating policy of England's Ally, seeking the encirclement of Germany and desperately afraid of that country's newly arisen military power, would be bound to end in war. Well, war had come accordingly, with an eagle's

swoop instead of being heralded by the beating of drums, and there existed in consequence an illogical though human opinion that anything that happened to France served her well right. In film parlance, France was not a box-office attraction.

Lastly, the public believed in its Air Force and were well satisfied that the balance at present in the enemy's favour would soon be more than redressed. They were prepared to hear within the next twenty-four hours that the Capital and cities of the chief enemy were reduced to ruin and that their population was fleeing.

The proceedings closed with a few rapid-fire questions which in some cases elicited a reply and in others not. Specimens are these.

What role was it intended the Army should play? Conscription of the entire nation would become law and all except the units of Home Defence would be held disposable for service on the Continent.

In what mad fashion had it been ordained, not only that half the Navy had been placed in jeopardy, but that a good proportion of the Air Force should also have been unavailable to protect the country? No answer except a plea not to raise matters which could not affect the present situation.

Had the much advertised rapid-fire pom-poms and large-calibre anti-aircraft guns of the Navy justified their existence? No answer.

What was the situation as regarded Foreign Missions in London? Those belonging to the enemy countries would be interned as aliens. Those belonging to neutrals and allies would be offered shelter outside London.

Could it be stated to what extent in equipment and personnel the Air Force had suffered on account of the surprise attack at Hendon?

WAR OVER ENGLAND

A full estimate was not yet prepared, but in any case it would be undesirable in the highest degree to furnish a reply.

No sooner were the proceedings at an end, and the members of the House slowly threading a way on foot and by car through the people who were still thickly gathered, when various announcements were broadcasted concerning precautions which should be taken in anticipation of renewed attack at nightfall.

An impression of the faces of the people as the House emptied was described in a letter from which this is an extract.

“It was a dumb wondering. Eyes glanced a question in a manner of mute appeal, but the tongue did not utter. It was strikingly like the patient, low moaning behaviour of herded animals at a mart awaiting a change of ownership or purchase for slaughter.”

CHAPTER FOUR

THE DAY AND NIGHT OF SUNDAY

THE work of rescue and clearance continued throughout the Sunday, effort, in the interests of public health, being mainly confined to removal of the dead.

At Hendon this task was peculiarly painful inasmuch as nearly all had been partially consumed by fire. Towards dusk, owing to much whole-hearted endeavour, the labour neared completion and a proportion of the helpers had already been drawn off to assist in the stricken dockland area.

Here the many conflagrations still burnt uncontrollably, fed by the combustible nature of the warehouse contents, the hard and soft-wood timber stocked in many yards, and rendered almost unapproachable for the fire-fighters by the fierce heat engendered and the constant toppling of the tall walls. The gas, moreover, was difficult to disperse owing to the building congestion in the vicinity. Yperite had been utilized, which penetrated ordinary clothing, and although the decontaminating squads were themselves protected from ill effect, casualties occurred to the firemen and others on the scene of action. A wide cordon had been drawn enclosing the whole area. No one on any pretext was allowed through, and in a reverse sense there was a constant outpouring at every exit of families, laden with their portable household effects, who had been ordered to evacuate this or that quarter as the flames approached. Here again was noticeable the expression of dumb inquiry and patient anguish on the faces of the people thus bereft.

The problem of estimating the material damage, or of assessing the possibility of repairs to the dock gates was not even considered, the saving of life and the extinguishment of the all-consuming fires absorbing all the human energy available.

The basins themselves were an inextricable mass of drunken shipping, leaning at all angles and lying on its side; partially submerged at high water and for the most part high and dry at low. The great Greenland Dock was likened by an observer to a bath in which a child had been playing at ships, leaving them to care for themselves when the nurse ran the water out.

At the four other great ports which had been attacked similar scenes were being enacted on a lesser scale. In these places a greater panic prevailed, the population not having the same remarkable respect for authority and the same observance for law and order, which was the pride of the London citizenry, as particularly evinced in the Great War.

Turn we now to the state of affairs underground. Here wonders had been worked. It had been possible, owing to the nature of the task, to work uninterruptedly through the night. The numerous station exits, moreover, and the fact that in most places it had been possible to supply lift power from an outside source, had greatly facilitated the labour of clearance. The living had all been dealt with during the night and since dawn the work had merely involved the mechanical task of bringing bodies to the surface. Cordons were drawn, as in dockland, to allow free coming and going and a wide elbow-room for the workers, and no one, not even inquiring relatives in search of their missing, was allowed within the enclosure.

Conveniently near at hand suitable premises had been commandeered by the police for mortuary purposes. At South

Kensington, for instance, the Brompton Oratory had been turned to this use, and at Paddington the railway station itself. To these places the inquirers were directed on their mourning progress, and here they came to identify their own, but not to bear them away.

The difficult question of interment had already occupied the Home Office authorities. The impossibility and undesirability of funeral services and separate funerals had been early recognized. Cremation was likewise out of the question.

Finally it had been decided that mass burial must be resorted to. Accordingly a level acreage of land had been hastily acquired in the vicinity of Staines and before a complete count had been possible an army of men had been procured locally, with machine-excavators and other necessary appliances, to do the necessary work.

There was little demur when this emergency measure became known on the Sunday afternoon by means of the loud-speakers and private receiving-sets. And when it was realised that the ground would be consecrated and reserved for ever as a national memorial with a marble remembrance building erected over the grave, the feeling was that more could not be asked.

Meanwhile, the stream of outgoing traffic, taking families of the well-to-do class into the country, ceaselessly continued. Many joined together to hire road-coaches and even double-decker buses. The L.P.T.B. and private companies were encouraged to do all possible to facilitate the partial evacuation.

The suburban electric train services, all that Sunday, were crowded to capacity, chiefly with women and young children seeking a refuge among friends and relatives in country areas well outside the perimeter of Greatest London. The platforms

of the big termini were likewise congested with would-be travellers in far greater numbers than the railway officials could handle in spite of putting on many extra services.

The question had been considered by the Government of taking over the railways and allowing free transport out of London. But on reflection it was thought that the result might be a flight *en masse*, and such an unmanageable mob demanding space, that utter dislocation would ensue. Troop movements by rail, moreover, were about to commence and it was necessary on that account not to disperse the rolling-stock and confuse the time schedules.

There took place later on this Sunday afternoon a moody sign, coming from a section of the population, which only affected the road-users in their cars and coaches. As the endless stream of vehicles, crammed with passengers readily distinguishable from their clothing as belonging to the upper and upper-middle classes, traversed the working-class districts and the poorer thoroughfares on their way out, hoots and jeers were cast at them by a serried pavement throng which watched them go by. They were, in some cases, shriekingly accused of leaving the sinking ship like rats. In others, they were adjured to face the music. Missiles were flung, not injuriously to limb, though glass was broken. The outward pace of the three- and four-abreast line of traffic, confining all which proceeded against it to side streets and alternative routes, was that of a crawl with frequent halts. In this way those who were merely acting in accordance with the wish of the authorities were frequently subjected to rude chaff and a fire of abuse while stationary.

It was a curious demonstration so early in the day. It was partly the result of class-consciousness, and partly of human envy. The people afoot were not really criticizing conduct so

much as visiting regret at their own stay-at-home necessity on the heads of the more fortunately situated.

Other scenes, of a much more serious nature, were being enacted in other parts of London in the unreal atmosphere of the Sabbath afternoon. Unruliness had broken out, particularly in the districts which harboured an alien population. It commenced in Soho where the French and Italians came to loggerheads, and in Stepney and Bethnal Green between the Russians and the Poles. At first it was confined to those particular quarters with the Londoner of British birth taking no active part. But very soon disorderly elements began to gather and cohere, with the cry in their mouths of "down with the foreign enemy."

It was extremely difficult to cope with because the disorder spread like a prairie fire. Inhabitants of German nationality, to be found mainly in the western and west central districts, were assaulted and their premises broken into. Italians round Saffron Hill and Finsbury were violently treated at the hands of a mob of hooligans, largely of foreign nationality themselves, who looted business premises and food shops under the pretence of patriotic indignation. Signboards bearing foreign-sounding names were accounted enemy strongholds without distinction of race in the general out-of-handedness and, in this way, many of the French colonies in St. Pancras and Marylebone suffered mishandling and pillage.

The police had mostly been drawn towards Soho where the rioting started and had their hands full in that direction. The Special Constabulary were fully engaged around the Tube exits and in the dockland area assisting, in the latter vicinity, the evacuated population out of danger's way.

People's mentalities were distorted by fear and foreboding so that the animal instinct prevailed and London in a single

afternoon lost for ever its reputation for *sangfroid* under the shadow of adversity.

It was essential that this frenzied ebullition should be put a stop to before something not unlike revolution broke out, and accordingly a drastic step was taken. Troops were called out and armed with ball and blank, the former for unhesitating use if a threat did not prevail.

In a few cases the platoons or half-companies were accompanied by a magistrate who formally read the Riot Act; but more generally the situation was in control of the officers in command.

Unfortunately, as it so happened, the Guards Brigade was away at Pirbright for training and two line regiments had taken over the garrison duties for the time being. They had neither the experience nor the martial aspect best calculated to deal with such a situation. They knew something of ordinary strike duty, wherein the relationship between the strikers and the military was usually of a cordial nature, but the idea of firing point blank at fellow-countrymen, with women in the crowd, was inconceivable.

In consequence mistakes were made. Here and there, through sheer inexperience, they allowed themselves to be overborne and disarmed. In other places the order to fire was given unnecessarily soon and, although the bullets were directed overhead, people in the rear and innocent wayfarers a distance away were killed and wounded.

One particularly grievous case occurred outside St. Martin's Church. Services of intercession had been hastily organized in many of London's churches and the religious-minded had responded to the call in great numbers.

The vicinities of Charing Cross Road and St. Martin's Lane were particular hotbeds of disorder and a half-company of

THE DAY AND NIGHT OF SUNDAY

soldiers was facing both ways where the latter thoroughfare cuts into Long Acre. Blank ammunition had failed to disperse the possessed rioters and finally the order to raise sights and fire ball had been given. The first volley went off just as the large congregation of Saint Martin's Church was leaving after service, when the portico and steps were crowded with the late-worshippers. The bullets fell among them and many were hit. The second volley came before any full realization of what had happened, while those who had fallen were thought merely to have fainted, or tripped and stumbled.

But then instant panic set in. The people broke in all directions only concerned to remove themselves from the fated spot. At the same time the fleeing rioters burst down on them in a similar panic to escape and wave met wave. The weaker were brutally overborne and when at last ambulance men appeared on the scene fifteen dead bodies were recovered and twice that number subsequently treated for serious injury.

Towards dusk a semblance of order was restored. This was not that the fury engendered by hopelessness and fear had abated, nor was it that the hand of the law had wholly prevailed. It was more an inward reflection that time was getting on, and that the open street was no place to be found in when the bombers renewed their activities. There was a universal scurrying indoors, and those who were out of their own districts made rapid steps homewards.

The wreckage had been enormous. Whole streets of shops had been looted and the litter of broken glass and food commodities covered pavement and roadway. In very few cases had premises been pillaged which did not contain food or drink. Neither clothing, jewellery nor other wares of the sort had tempted the rioters on this occasion and even the fur shops were left untouched. It was the foreign food stores, with a

window display of wine and delicatessen, which had been sought out for the most part and many were the strange burdens of continental sausages and wine in straw-covered flask which were deposited in humble dwellings ere night-fall. Food, with drink as makeweight if occasion served, had been the main object of the pillagers. It was symptomatic, no doubt, of the fear of shortage and, possibly, of scarcity amounting to semi-starvation which the Prime Minister's words in Parliament had been construed to indicate. The foreign element was very largely engaged in the provision trade, and if there was to be an insufficiency let them suffer first.

A few of the cinema houses had opened at 6 o'clock, but there was no patronage and the shows were closed down. The hotel population fed as usual in the restaurants on the premises, but the eating-houses of the better class, such as the Café Royal, Simpsons in the Strand, and the Criterion, were devoid of patrons. Only at the tea-shops, notably the Corner Houses and other Lyons's establishments, was there any custom and this merely because the people were habituated to feeding out on Sundays and had no food at home.

The public-houses had opened at 7 o'clock as usual, but only those in quiet districts continued to serve. In the areas of disorder and on the fringes they quickly put up their shutters.

By 9 o'clock the returning Guards' Brigade was detraining at Waterloo, and from thence marched in small detachments, here, there, and everywhere, in order to suppress any signs of renewed disturbance. It was noticed they were in full marching order. Some light tanks were off-loaded about the same time and accompanied certain of the detachments to their assigned positions.

In place of the usual Sunday-night crowds which thronged the parks at that time of year, and of the legion of children

at play with bat and ball, or flying kites, there was almost complete desolation. Even at Marble Arch, although some fervent preachers had hoped to seize the occasion by enlarging on the wrath to come, no one much was about to listen to the pulpit eloquence.

People in greater number than sixes at a time were halted by the police and soldiery. They were told to separate in accordance with the Martial Law decree and, particularly, not to be abroad after nightfall unless legitimately engaged, on pain of arrest.

And so fell the second night of war over England. The sound of traffic completely died away an hour after sunset and under the stars, showing palely in the late evening glow, London lay like a city of the dead.

Eastwards, the stricken dockland area, still furiously burning, illuminated the sky immediately overhead, providing, in people's estimation, a sure directional sign for the enemy even had there been no other guidance. Street lighting was not turned on.

In the breasts of the millions of workers who lived in the outlying districts, and who were accustomed to pour citywards of a morning like a flood-tide of humanity, there must have been conflicting emotions as the shades fell. Ought they to go to work in the morning, and if so how? Would they be alive to do so? Was business to be as usual? Was it true that food was short? When would a call be issued for their help to the country in the emergency? What could they best do?

They had not gardened in their plot at any time that day. The young among them had not played tennis, nor their elders golf. It was "black" Sunday everywhere.

Some of them from their houses could observe fields in the distance, and woods and rolling land. They found themselves

strangely stirred to recognize with an outward eye the familiar and beloved scenery, and with an inward to realize the grim spectre which overshadowed it. It had a softer beauty than ever before, the peace and sanctity of a gentle invalid marked for death.

Children had been put to bed as usual, but their elders preferred to sit up, snatching fitful sleep if any were possible, fully clothed and ready on the instant.

And so night fell. The bombers might not come. Or if they did they might not visit London. And if London were visited the part they lived in might be spared. In the last resource, amid the self-centring thoughts which were not to be banished from the brain, they might personally survive even if ruin was around them.

At 9.30 p.m. the Archbishop of Canterbury commenced to broadcast a prayer for the safety of England. It was followed by the hymn, "O God, our help," and then the Primate started to deliver a short address of comfort and sustentation. But he had got little further than the opening phrases when his voice was cut off and another, more familiar to the listeners, was substituted.

It was that of the Director himself, and it said:

"The Ministry of Defence has just received warning that hostile bombing-formations are reported to be flying at a great height over France, and that they are directed towards these shores. If London is again one of their objectives, as is most likely, they will probably arrive overhead in a little less than an hour's time. French fighters have ascended to give battle and our own fighting aircraft are about to take the air. All citizens are enjoined to remain indoors wherever they may be and to observe the air-raid precautions. In the circumstances the Archbishop will not resume his address. Our own and the French bombing-squadrons are about to set out on

long-prepared missions of attack, the result of which will be broadcast as soon as known. Nothing more will be given out from this station until daylight."

The suspense of the ensuing period of waiting can be better imagined than described. To the more active-brained it must have felt like a slow execution; to the staidier minded like the inevitability of a tide coming in. The thought of gas, curiously enough, they could endure in the comparative safety of their sealed chambers and behind their masks. In a crowded space with everyone fighting to get away, seized by mob-panic and thus frenzied by the most communicable form of fear, it were another matter. But in family or friendly isolation the thing did not seem to exist until it might be actually felt.

The bombing they could withstand, or rather the thought of it, realizing that the area of dispersal is restricted, and that it would require singular ill-luck to become a direct victim. Bombs were fearsome, but bearable as long as the crash of explosion was not too near.

It was the incendiary missile, elektron, thermite, tellite, or whatever it might be, small enough to be cast in showers, scorifying what it touched and setting all alight, which they trembled most at the thought of. Was not that eastwards brightness in the sky, the homelessness of multitudes from that quarter, and the appalling reports of damage done and injuries inflicted, occasioned by that same thing? No, gas might be guarded against, provided it was not "mustard" and one was not caught by surprise; bombs were a matter of mischance, pure and simple; both were horrible enough, but fire could spread as nothing else, so many flames could not be fought, and of all fates the worst was to be consumed by burning.

In the heart of London, with the view circumscribed by

neighbouring house rows on the ground, and overhead by a small patch of star-lit sky, it was a question of anxious expectancy for the crash of anti-aircraft artillery, heralding the arrival of the enemy in the vault above. But on the higher ground, notably at Hampstead, Highgate, parts of Streatham and Putney, those who were bold enough to mount to their roofs, or who gazed from upper windows, were in a position to see the panorama of war actually unfolding.

At one minute they looked into the blackness of the night. The next, beam on beam from the outer cordon of searchlights, those allotted to co-operate with the fighter aircraft and catch the bombers in their rays, pencilled the darkness. It was by no means a simultaneous proceeding. It was more as if some aery sprite were at large in the void touching off the long-legged beacons in playful sport at his own sweet will. But soon they were all lit up, some more or less fixed and stationary, others oscillating like gigantic metronomes.

That an air battle was in progress soon became evident. It was soundless owing to the distance and the wind direction, but every now and then a machine could be seen falling in flames, though whether belonging to friend or foe could not be determined.

A puzzling sight to these distant onlookers were certain searchlight effects in the skies themselves. Momentarily, they were switched off and on, directed horizontally and at all angles, but plainly emanating from contending aircraft.

Many, thus watching, were inclined to think that this was something the Royal Air Force had kept up their sleeves for just such an occasion as the one at hand, and their hearts lifted at the thought of the enemy's discomfiture now that the home defence was coming into its own. But the more thoughtful wondered oppositely whether it were not another example of

teutonic inventiveness and, if so, what effect it might have on the outcome of the war.

Very rapidly, as evinced by the lighting up of the sky with the tentacle rays, the battle approached on a wide arc, and soon the defending aircraft were obliged to draw off and leave the field for the time being to the guns and searchlights immediately protecting the Metropolis.

It now became the turn of watchers on the high ground surrounding London. Those who had experienced the former air raids of the Great War saw again the sight they had hoped never to see again.

Their eyes viewed a myriad stabbing, fencing, searching white-light beams, and their ears caught the well-remembered double detonation of the guns being fired and the bursting of the shells.

There were no crushing noises or dull reverberations from high-explosive bombs this time, and for a very good reason. It was an incendiary attack entirely. The bombers flew at an immense height, so as to be almost invisible to the naked eye when caught at the end of a ray, and they literally sprayed the city and its environs with small elektron bombs as a sower sows seeds.

Before the horror-struck gaze of those watching from a distance fires broke out all over London and in places far too numerous to count, and within an hour, helped by a fresh-blowing north-westerly breeze, the burning of whole quarters rivalled in flame intensity the inextinguishable conflagration which had been proceeding in dockland for nearly twenty-four hours.

But what of those dwelling beneath the fiery hail? What of them! A veil should properly be drawn over the tale of human suffering which that night contained. There is no need to

particularize. The built-up space of large cities varies from 15 to 50 per cent. according to their age or modernity. With London, although peculiarly well provided with lungs in the shape of parks and pleasure-grounds, of squares and gardens, the overall average may be taken at 35 per cent. In consequence, for every 100 incendiary bombs let fall 35 were capable of raising a fire point. Reduce that figure to 20, to offset a proportion of "duds," to account for non-spreading, unimportant conflagrations, or to allow for some non-combustible form of building construction, and the theoretical result is still impressive. The bombs used were of 2-kilo weight, slightly over 4 lb., and each bomber was capable of carrying a thousand. In this way each individual machine was potential to cause 200 separate fires. It became known long after that 80 bombers had started out and that only 60, owing to casualties in the air battle, participated in this actual attack, of which 10 were brought down by anti-aircraft gun-fire. The 50 machines, therefore, who completed their mission, ought in theory to have raised as many as 10,000 fire points.

The number was probably not as many in actual fact because the concrete roofs of flat dwellings, which was the constructional vogue at the time, in numerous cases resisted impact.

But it could not have been very far short. A spectator at Harrow Hill recounted that the entire city looked as if it were being razed, and that from his angle of vision there did not appear to be any portion unaffected.

The loss of life was naturally enormous, immense amounts of provisions were destroyed, and wealth of all descriptions went up in the flames. There was no dealing with such burning. The fires were quickly beyond the control of the householders, who could not approach the glow-lamp heat which the elektron radiated, and nearly all the city's firefighters were

away at the docks. The stricken, homeless multitudes, too crushed for complaining, and too dazed for coherent thought, made instinctively for the open spaces, unrecognizable to each other in their masks and all one in their sense of doom at hand. From park, from railinged square, from circuses and from recreation ground, in tens of thousands, they watched voicelessly the destruction all around. This time it had been a real heart blow, for the entire populace was affected and now knew war.

With the cessation of the incendiary attack, which occupied no more than half an hour in all, a new phase of assault developed. This consisted of an attempt succeeding only too well, to wreck London's system of water supply by bombers which came in low in threes and fives from an unexpected quarter.

The master-minds who had conceived the series of projects at leisure in their bureaux, who knows how long before the attack was launched, were certainly adept at mass psychology. The Hendon affair was a military measure entirely, undertaken with the object of crippling the nation's leadership and, to kill two birds with the same stone, of weakening the Air Force which formed the main danger to be encountered. But the dockland attack, and the cruelly overwhelming result of the power house destruction, were directly aimed at the general population, the one to starve them out, and the other to terrify.

And now, this attempt against the most vital of all municipal services, the water supply, water for cooking, for drinking, for washing and for cleansing of the streets, to name only a few of the needs supplied, was another mass-directed effect to break the country's will to war.

The attempt was by no means confined to London, as will

be later made clear, but the loud explosions which reached the ears of the cowed populace, muffled by distance or nearer at hand, heard amid the roar of flame and the crash of debris, were caused by the bombing of the main pumping-stations and the reservoir supply.

They were easily identifiable in the lurid glow and, moreover, it was quite certain that this project had also been mapped to a nicety, assisted by minute study of the exact locations and largely landmarked by the course of the Thames.

It was by means of the Press that people were informed of the full extent of the calamity. There was no newspaper issue the next day in the ordinary sense. But in the course of the late morning, and throughout the day, single-sheet editions were on sale and the public apathetically bought. The B.B.C., as far as Londoners were concerned, had ceased to be the medium of official announcement with the destruction of their homes and the general houselessness of so many.

All the same Broadcasting House had stood intact, and an announcement was made during the morning of which the following are extracts:

"The invading aircraft were met and engaged by our fighting formations from the time they came inland, and twenty were shot down. The exact number of enemy bombers could not be computed, but it is thought to be near a hundred. More success would have attended our pilots had it not been for a searchlight device which the enemy carried on their planes. This not only had the effect of dazzling our pilots' aim and confusing their manœuvres, but it also enabled the enemy pilots to shoot along the beams with accuracy, gun and searchlight being in synchronization. Our losses have been severe. Prompt measures will be taken to counteract the effect of the contrivance."

Reference was then made to the incendiary attack and a

mention that a further ten enemy bombers had been destroyed. People were informed that steps were being taken to evacuate all whose dwellings had been burnt, and they were asked to keep calm and not to despond.

"It is thought unlikely [the announcement continued] that such an attack will be repeated, at any rate not on such a large scale. During the night our own and the French bombing aircraft carried out preconceived plans, particularly directing their efforts towards rendering the enemy's aerodromes of concentration unusable and destroying their reserve material. Berlin and Rome were also bombed, together with other large cities in Germany and Italy. The result is not yet known."

There followed mention of the bombing of the pumping-stations, which would mean a scarcity of water, and people were informed that water depots would be established where necessary for vital usage until emergency repairs could be effected.

The announcement, later to be read in the news-sheets, concluded with a piece of information from the country outside which raised a dark foreboding in the breasts of all who appreciated its full portent, particularly in the case of those who had detected dubiety in the wording of this communiqué and were, even then, wondering if the nation could hold out as it was.

"Grave news has been received from the provinces. Long-distance flights were made by enemy bombers during the night as far afield as the Welsh hills west of Hereford and Shrewsbury. The object was to damage the reservoirs, constructed at enormous cost, on which Liverpool, Birmingham, Cardiff, Swansea and many other centres of population, even London to a large extent, depend for their water supplies. Such action was not foreseen, and the hostile aircraft, after they had passed the defences and penetrated well inland, were able to work at will. It is too early to assess the damage pre-

WAR OVER ENGLAND

cisely, but it is not an exaggeration to say that a water famine is threatened in the towns and cities thus served. Both Elan and Vyrnwy aqueducts have been destroyed, and the massive dams at places such as Bala, Vyrnwy, Llangorse, Yrfou, Cray and Dol-y-Mynach, have been badly breached by high-explosive bombs."

CHAPTER FIVE

THE END OF A PERFECT WAR

THERE are sixteen main-road exits out of London, running fairly evenly-spaced in all directions, like spokes from the hub of a wheel. The intention was to remove, at the rate of a million and a half each day, the whole of the evacuable part of the population to the comparative safety of the open country outside. The idea was a general movement radiating outwards, a migration in fact, which should result in a general distribution of the hordes of people, in towns rather than in cities, as far afield as accommodation could be found.

There was no compulsion. It was not necessary. The people were only too glad to go with only what they stood up in. In fact, a main difficulty was to prevent a surplus demand and enable the "embussing" to take place without a dangerous overcrowding of the vehicles.

The omnibuses of the L.P.T.B. were impressed for the service, and provincial bus companies, such for instance as the Southdown, were given orders for the assembly of coaches at pre-arranged places to relay those being evacuated.

The measure, thus hastily contrived for the relief from suffering and congestion of London's masses, did not, as will be later seen, continue into Tuesday, the second day. Nor did it proceed on the Monday at the rate intended. It was too vast an arrangement for a hasty improvization, and although the officials worked manfully, it was computed that only about 300,000 in all, of the people got away.

During the day, acting on advice given by placard, by crier, by loud-speaker, and by civil aircraft trailing banners, the people themselves assisted matters, and relieved congestion, by making for such open spaces as Epping Forest, Hampstead Heath, Richmond Park and Woolwich Common, according to the position of each place. There they were to spend the night sleeping out, and there already food depots, largely consisting of tinned varieties, with a special arrangement for milk, were in course of being established.

The feeding of the populace, indeed, was a chief difficulty. Not in the sense, by then, of national shortage, but of the immediate moment.

As regarded the greater question, Glasgow and other Northern ports were still intact, as also many lesser harbours, up and down the coasts. Ships were being directed, according to their tonnage, to enter or lie off everywhere where there existed off-loading facilities and storage space. All livestock was held disposable by the Government and slaughter was forbidden except under permit. Similarly, cereals of all kinds home produced were impounded, and millers' stocks were sealed. It was felt that by careful arrangement and rationing, by strict precautions against loss and hoarding, and by subsequent salvage of that which had escaped destruction at the docks, that the question of serious food shortage need not confront the country at all. Oil was a much more important matter at that moment, especially in view of the huge consumption necessitated by the partial evacuation of London, and a stringent ban came down on the use of private cars unless engaged on work of public utility.

The immediate necessity was food for empty stomachs, for the major portion of the populace were breakfastless and, as the day advanced, they went dinnerless as well. Information,

therefore, widely advertised, that food might be procured at the places mentioned, impelled the masses to move in those directions and thus they assisted the intention of authority.

Fortunately the weather had set fair and the anti-cyclonic conditions were forecasted to remain.

Unfortunately, on the other hand, the heat by day increased distress and water was not easily procurable for so many thirsty throats, apart from the damage overnight to the reservoirs and pumping-stations. Urban and rural authorities had been admonished to accept the extra populace on the rough basis of trebling the number of their inhabitants, and had been told at the same time carefully to guard their local food supplies.

Meanwhile, as is now known, intelligence was being received from abroad so bad that the Cabinet took the responsibility of breaking their pledge and concealing it from the people. It did not really matter as far as Londoners were concerned. They had reached that stage of misery in misfortune where the senses are dulled and unreceiving.

It has been said of the trench-soldier, in the Great War of 1914-18, that during those months of the year when he lived and moved in a sea of mud, he was often careless in avoiding danger. This was not because of any relief from misery which death might bring, but an apathy and a dull-wittedness occasioned by the simple fact that he was calloused to bear anything and that nothing could be worse. So it was by now with the smitten metropolitans.

The fact that they were being herded like sheep, that their homes, or what remained of them, were left unguarded, and that they were literally vagrant, did not appear to cause perturbation or any disposition to rebel against fate. They were a cowed multitude, passively helpless, and even sullenness was absent from their demeanour.

Actually, the incendiary damage done during the night, the fires of which flamed or smouldered throughout the day for lack of water and brigade assistance to put them out, was less extensive than the panic-stricken people thought. The congeries of eight thousand odd avenues, crescents, gardens, mansions, mews, places, roads, streets and terraces, which make up the surface area of the world's greatest capital had not all been victimized by the elektron bombs. In many cases owing to semi-detachment and wall thicknesses, the fires had not even spread to neighbouring dwellings, and had burnt themselves out.

But although this may have been vaguely realized it was not appreciated, and it certainly did not operate to cause any lingering round the hearth. They were compelled by the terror of the night and by the single thought that on no account must they be found indoors again at nightfall.

The fact that bad news was being withheld did not matter, therefore, in the least, and in the country at large the force of public opinion could be discounted. It was bad enough.

Aden had been bombed by the Italian aircraft from Eritrea and the slender British Air Force at that station overwhelmed. Shipping in the harbour, including passenger liners, had been similarly destroyed. The straits of Bab el Mandeb at the entrance to the Red Sea were under constant surveillance by enemy machines which shepherded ships back to Massowa as prizes of war. The black Italian troops of Ethiopia had invaded French and British Somaliland.

In the Mediterranean worse still had happened. The eastern exit via the Suez Canal had not been interfered with by either side. Great Britain dared not take the initiative in thus bottling up the great water thoroughfare of supply, not even to cut communication with Italy and Abyssinia. For Italy to do so

presented no advantage, seeing that she could cork by means of aircraft the southern exit of the Red Sea. But in the Mediterranean itself she had been fully active consequent on the surprise blow she had delivered three days ago to the British Fleet.

From Rhodes, from Tripoli, from Sicily and Sardinia, and from the Italian mainland, her bombers, light, medium and heavy, had been sweeping the waters of all British and French shipping. The task had been simple.

Every vessel, whether outward or homeward bound, had to pass through the narrow lane which Sicily and Sardinia form with the North African coast.

It is only a little less or more in places than a hundred miles wide. The methods employed were various.

Oil-tankers, so easily distinguishable as such, were halted by the dropping of small smoke bombs in front of their bows, and then directed by megaphone or by a dropped message to make for Palermo, Messina or Naples. Ships recognized as grain-carriers or, by their house-flags, as carrying meat cargoes, were sunk out of hand. Passenger boats were treated the same as the tankers, but if the slightest obduracy were shown, or if they diverged under cover of darkness from the given direction in an attempt to renew the voyage, they were mercilessly bombed to the bottom when daylight broke.

The French Air Forces in Algeria and Tunis were not strong enough to cope with the situation. Very few fighters were stationed in those colonies for one thing and, for another, the tribes of the interior had instantly responded to the turmoil in Europe by rebellion and thus absorbed most of the available machines.

The British Air Force, on the other hand, which had been dispatched to the Nile Delta, together with a tank brigade and

certain mechanized army units, for purposes of general reinforcement and to oppose an Italian advance from the Libyan frontier if such threatened, mainly consisted of fighters. But the over-water distances were too great for effective action, and the political sky in Egypt was so black with clouds of revolt against British overlordship that they had been obliged, in any case to stand by for necessity.

The stream of shipping from India, Australasia, and the Far-Eastern ports which followed the Mediterranean route had been early warned to voyage the long passage round the Cape of Good Hope. Not only was this, however, a cause of grave delay in receiving much-needed supplies in the British Isles, but it created bunkering difficulties which, had the war continued, might easily have so congested ports of intermediate call as to occasion a stoppage.

These mournful happenings, though wide of the subject, which is more especially that of the war over England, nevertheless have deserved description in some detail because they did have an immediate effect on the counsels of the nation. It seemed to the members of the War Cabinet that sailings from Canada must now, and for long, be exclusively relied on for the replenishment of the country's reserves of food. The United States was sure to preserve a strict neutrality and, in accordance with a recent Presidential decree, would suspend trading activities with either group of belligerents until the war was over, or unless she was brought in.

Glasgow would be the main reliance as a port of entry, for at the four cities where the docks had been so grievously damaged lighterage provided the sole means at the moment for off-loading. Unfortunately there was a strong element of unruliness in Glasgow's population. The local authorities had already been forced to take strong measures against

food rioters and mob-rule in the poorer wards of the city, and grave fear was felt that the situation might get out of hand.

Reports from other centres of population did nothing to allay a growing feeling in Government circles that matters were becoming desperate. Provincial England is apart from London in more than a geographical sense. London unemployment, and the smouldering discontent which out-of-workness brings, was inconsiderable regarded as a percentage of the population. The citizenry possessed a great corporate pride. They were well inured to civic discipline and obedience, and they were also too large a mass of humanity and too sectionalized by call and occupation for the cohesiveness necessary to law-breaking in the revolutionary sense.

Not so outside in the centres of heavy industry and the coal-mining areas, where conditions had been bad for several decades. There the bodily inertia induced by unemployment had by no means resulted in mental inactivity. Communism and its near relation, left-wing Socialism, in such localities had found large feeding-grounds. It had been openly voiced that conditions could be no worse under foreign domination, and probably much better. It was not a movement so much as a state of mind, but the authorities had been troubled at it for long, realizing that an unresponsive attitude on the part of two million or more workers would be a decided danger at the outbreak of a war.

In addition to the widespread alarm and despondency which had shot through the entire country at bullet speed; to the rumours of disaster everywhere which, though hard to exaggerate, were repeated to excess; to the now practically waterless condition of many towns and cities in a season of drought; and to the personal experiences of thousands on thousands who

had undergone bombing; there was another factor in the situation.

At the commencement of the Great War the country had put on armour with a calculated period of time for the operation. Notices by post had gone out to reservists, troop and train movements had taken place according to schedule, and everyone concerned, from high to low had known what to do. The thing had been done quickly, though in unhurried fashion and, above all, not beneath the threat of death and destruction during the proceeding.

But on this occasion it had been very different. Postal and train services had largely ceased, or been disarranged. Notices had not been received and there had been a general hesitancy about everything. To a general, vague disinclination under conscription to enrol was added, in the absence of positive direction, a perfectly legitimate excuse for not doing so. The result, inevitably, had been a loosening of national discipline, and a widespread feeling already that *laissez aller* was as good a game to play as any. Was the continuance of Empire, many people must have thought, worth what was going on? A mood of defeatism was already spreading over the country's black spots of poverty and unemployment. The nation's counsellors must have indeed passed that Monday wracked by a dreadful anxiety, for throughout the late morning and afternoon news, the reverse of reassuring, had been coming in from France.

The bombing offensive against Germany and Italy had duly taken place and, as is now known, the major effort had been directed against enemy aerodromes all of which, it had been thought were marked down and distributed as targets.

The truth was that the success of the surprise attacks had constituted a lee-way which it had been quite impossible to

make up. That any future war would commence unheralded by such surprise had been a foregone conclusion in most military minds. But, in France, as in England, the Chiefs of Staff had been obsessed with the idea that sound strategy demanded a knock-out blow against the Air Force of the enemy. The argument was sound enough. If the opposing Air Force could be heavily defeated by surprise attack on all its aerodromes and depots of supply it would be like cutting off gas at the main. For air mastery would result, until it had recovered from its crippling, if it ever did, and with air mastery the enemy could be held in fee. To effect air mastery meant victory, neither more nor less, and a quick victory at that. The initial effort, in full force, must therefore be bent in that direction. And as for the surprise itself, the exact time, that is, at which to launch the offensive, why that must depend on circumstance and on the fencing skill of politicians.

Such was the doctrine, and to such an end study was directed, and a combined plan arrived at as between England and France.

Unfortunately the enemy's psychology had proved superior. He had thrown the design out of gear. It is true that the disposition of England's forces was in his favour owing to their dispersal. But it was more than that. Building on the fact that neither French nor English mentality could conceive such utter ruthlessness, his strategic stroke had been a masterpiece. For not only had he secured the initiative, but he had effectually prevented, or rather forfended, a counter-blow by first throwing the gage and thus taking the sting of surprise out of the enterprise meditated against him by converting it into a mere counter-attack.

Great damage had been done in places to the aerodrome appurtenances, to the sheds, the stores, and to the surfaces of

the permanent stations, but not a great deal to aircraft. Alternative landing-grounds had been provided in each case for just such a contingency and in many cases the machines were stowed underground.

There had been air battle as well and casualties to count. Berlin had been reached by a French bombing formation which attacked with high-explosive, gas and incendiary. The result was unascertainable, but it had looked effective. They had met with strong air opposition on the part of two-seater fighters, thus capable of attack at other than a head-on direction, and had suffered serious loss.

This information had been coming in in dribblets, and some of it, that concerning the alternative landing-grounds for instance, was not known until afterwards. It had not looked too good and the losses were serious. Nevertheless orders were issued for a repetition on the night following of the same methods, the phantom of air superiority still the foremost consideration.

And now must be related the result in France of the enemy air action during the Sunday night, which took the keystone from the arch of that country's resistance and toppled it to the ground.

Both enemies had another main advantage which ought to have been recognized as an enormous military asset. They were Dictator ridden instead of being Democracies.

Their populations were enslaved. They were moulded almost at birth as leaden soldiers are manufactured. Their food was patriotic puffs and their drink the waters of a stringent discipline. They had lost vocal utterance and could only gesture slavishly in sign of their complete subjection. To say they were really robot states is no more than the bare truth. Their only privileges were to act obediently and, deprived

of liberty themselves, to fight for the freedom of their country.

On such soils revolution cannot flourish, nor can physical fear react to cause an outburst.

During the Sunday night, when London suffered under a rain of incendiary bombs, two huge aerial armadas were sent out over France. They flew in arrow-shaped formation of five at a time, at intervals of a minute. Each followed the exact path of the one in front so that, had it been by day instead of by night, they would have resembled a flighting of follow-me-leader sea-fowl changing their feeding-ground. The destination of the one was the Rhone basin from Valence to Lyons, and of the other the Lille district of northern France, both highly industrialized areas and both enfolding a dense population. As with the enemy bombers which were given battle over the South of England the same night, their searchlights put them on an equality with the single-seater fighters of the defence, as and when encountered, and although they suffered casualties they gave as good as they got and seldom broke formation. They were flying fortresses at ceiling height.

The devastation that they wrought was beyond count. Incendiarism was their object, that and nothing else, and continually they dropped parachute flares of a high brilliancy which not only guided their aim but also hampered that of the anti-aircraft gun crews below.

If Paris was the heart of France, those two selected areas were the right and left brain-lobes which directed her activities and co-ordinated her bodily control. That night they were paralysed, so that the heart of France went dead within her and the rest of her body lay numb.

It is not necessary to describe what took place on the ground.

What has already been said of London supplies the need. It is sufficient to say that the will to war of the population in the areas affected was effectually broken and that they clamoured for immediate peace.

To enforce the demand the populace revolted, and instantly the flames spread to Paris and elsewhere until the Government at Bordeaux realized that the thing could not be withstood and surrendered to the popular claims.

It is ancient history now how events transpired immediately following this collapse. No more than the briefest summary need be given. The French Government apprised the enemy Governments of their willingness to submit, and a representative deputation flew from Bordeaux to Stuttgart to listen to the terms of armistice. To their agreeable surprise these were not onerous. They involved the return of ex-German colonies, together with frontier rectifications which made French Equatorial Africa, south of latitude 10° , a German possession. There were some financial clauses and Italy received all that part of the Sahara lying between longitude 10° and latitude 10° . It was evident that the two Central Powers were anxious to placate France by letting her off as lightly as possible, Britain being the real game which they hunted. The only really stringent clause applied to the Air Force of France, which was obliged to surrender *en bloc*.

It is history now as well how this was finally accomplished in the face of mutiny, almost, on the part of the French escadrilles; how the vast aerodrome at Nancy was appointed as the receiving-station; and how the entire collection of fighting aircraft thus assembled was sabotaged by the humiliated pilots, rather than that they should become trophies of war.

It is the escape of the British bombers which provided real

drama. These had been included in the surrender terms without reference either to the Air Marshal in charge or to his home Government, and the French deputation, having no option but to sign on the dotted line, submitted to the betrayal and agreed. It had been given plenary powers and not even the Government of France itself knew of the terms, much less the British Cabinet, until signature made of them a *fait accompli*.

The British Air Marshal, however, had been acute enough to realize the danger. He knew of the unrest all over France, and that revolution had broken out in places. And he gave full credence to the rumour flying round that capitulation was in the air. Sending a courier machine to the various aerodromes on which his command had been assembled, secret instructions were issued for each separate unit to fly off independently for home at a certain zero hour of the afternoon.

It is related that at one place this was very nearly prevented. The French Air Force there (it was at Ochy) jumped at the conclusion that England had deserted the alliance, had made separate terms, and was leaving France to her fate.

In England, the War Cabinet were in a veritable fog. The care of the home population was a dreadful anxiety on their hands and the messages received from Bordeaux were confused, evasive and scanty. Repeated demands for exact information as to what was going on produced only temporizing replies after much delay. The first real intimation, in fact, of the trend of events, was the arrival at their home stations, towards 7 p.m. of the bombing force from France, and the appearance in London, a little later, of the Air Marshal Commanding with a full explanation of the reason for his action. To the War Cabinet assembled in counsel it looked like the end, for within a day at most the enemy attacks could be launched from the French coast, from places unrecon-

noitred as targets for bombs, and with only French towns to make reprisals on.

In this predicament a drastic resolve was adopted. It was decided to undergo another night of attack in the hope that the fighter aircraft might secure an air victory which would cause the enemy such losses as to compel him to relinquish further activity until they could be made good. It seemed the only thing to do. By no means did it appear a counsel of despair. It was brave, reasonable and in the British tradition.

The Cabinet was further emboldened, moreover, by satisfactory reports which had been received of a blue-tinted goggle glass, on the lines of that used by acetylene welders, which would dull the glare of the enemy's aircraft searchlights without handicapping vision. The Home Defence pilots had accounted for twenty enemy bombers the night preceding and were enthusiastic to try again.

The history of this unprecedentedly short war, this gem of carnage, now draws to a close. The last chapter contains two sections, the first dealing with the air battle at ceiling height in the dark sky above, and the second with events lower down and on the ground.

As regards the first, the simple truth is that battle was never joined. Briefly, the greater part of the defending aircraft were led off on a fool's errand far afield from their lines of patrol, and when they had perforce to return at the limit of air endurance that which had meanwhile taken place on the ground was all over and done with. Teutonic inventiveness once more had gained the day.

Decoy aircraft had done this thing, a device never contemplated, and then used for the first time. These were specially designed, high-flying, exceedingly fast machines fitted with a mechanism which could reproduce the sound of many aircraft

overhead, making one into a squadron, and two into a brigade, from the sound-locating point of view.

Several of them, as it is now known, came in at an immense height, flying west and north-west as if for concentrated attacks, on Portsmouth and Southampton in the first case, and on the Black Country in the second, but religiously avoiding the Metropolitan area. The decoy was successful in the highest degree, as how should it not have been, and the way, except purely from ground defence, lay wide open for low attack on the camping-out multitudes who were densely congregated in the open spaces just outside the city.

The enemy's unerring tactics from first to last need not surprise. They were merely the result of long preparation and close study, coupled with an aptitude for deducing mass behaviour under the stress of intimidation. He knew that the populace would abandon their habitations after the first incendiary attack. He knew that a city's population could not be evacuated in a day, nor in a week of days. Building on these two axiomatic principles, he applied to the simple problem an intimate knowledge of outer-London topography and took action accordingly.

They were easy to locate, especially the long-shaped Epping Forest, by reference to the bends of the river and to the two-mile length of King George's Reservoir near Chingford. They constituted Nomansland for the anti-aircraft guns of the defence, being within the inner patrol area for aircraft.

Practically, the enemy bombers had it all their own way. By coming in low, so that they almost appeared to skim the trees, they baffled the gunners of the few batteries over which they flew, and the battery search-lights, their beams projecting at a low angle with the horizon, more frequently than not were trained on trees and houses.

WAR OVER ENGLAND

Bushey Park, Hampton Court Park, Richmond Park, Old Deer Park, Kew Gardens and Wimbledon Common were thus visited on one side of London, together with Hampstead Heath, Alexandra Park and Epping Forest on the other.

Mustard gas, in semi-liquid form, was used and it was sprayed down from a container in the fuselage under pressure on the principle of a watering-can.

No attempt will be made to depict the scenes of horror which ensued. Pen could not describe them and the tongue falters at the task.

It was the end. Even before dawn the two Governments were in radio communication. After that proceedings were quite simple.

England was merely advised to sign, like France, on the dotted line and, like France, England did.

•

PART III
THE LAST WAR

•

CHAPTER ONE

RESTORATION PERIOD

IN one important respect, vital to civilization, prophesy had proved false. War on a national scale had not, as thinkers expected, unloosed the floodgates of barbarism and inundated Europe with a resurgent, uncontrollable mass of predatory scum. It had not been mutually destructive at all. The demon could not say of itself *après moi le déluge* in the manner of the Sun King Louis.

The fact had been that the nations, Great Britain and France as far as this history is concerned, who had suffered surprise attack from the air, were effectually deprived of retaliatory power at the same time.

This is not to deny that the struggle might have been continued in the purely military sense. The Air Force of neither country had been decisively defeated, large portions of both fleets remained intact, and the mechanized army units had not been affected at all.

None the less, all three arms, land, sea and air had been rendered impotent by the one overwhelming fact that the will to war of the people in both countries had been broken. Not only by surprise but by a carefully timed moment for launching an offensive and, also, a careful, masterly study of the most sensitive points of attack, the heart of the people had been taken from them, with the result that the Governments saw neither purpose nor possibility in prolonging resistance.

Ruthlessness in dictatorship form had won the day and democratic methods of rule, both monarchic and republican had no machinery of compulsion whereby their peoples could be induced further to sacrifice themselves.

In consequence of the extreme brevity of the campaign, if so it can be called, the victors emerged without a scratch to show comparatively, and the vanquished were by no means prostrate. Using the parlance of pugilism, one side had been counted out at the commencement of the first round and the other was still as fresh as paint. The suddenness of it, the example of two old-established Empires being thus struck down, and the realization of the immense strength of air power properly directed, caused humanity to hold its breath.

Elsewhere in warring communities, both in Europe and the Far East, where hostilities were proceeding more in oldtime fashion, the resounding effect was immediate. Under the spur of fear, and actuated by a lively sense of danger to themselves in a war-weakened condition, they hastily composed their age-old differences and turned with feverish energy to putting their own houses in order. If, they argued, air power can do this thing; can render fleets and armies obsolete; can bring a country to its knees within a week; then we too must transform our budgets and spend whatever is available, or can be made so, on the aircraft weapon.

We are not concerned here immediately with world conditions. Our sole purpose is to describe the England after the Short War, as it came to be called; her reconstruction; and the way of her people following a new rule of life. But some account of the changes which ensued in her fabric of Empire is necessary to a complete understanding.

By mutual agreement it had been generally arranged between the two enemy countries that the French spoils

should fall to Italy, and those of Great Britain to Germany. Curiously enough neither country had betrayed excessive grasp and greed. It seemed that plenty was what they sought rather than power, and especially colonizing elbow-room and easy access to raw materials of supply.

As affecting Britain, for instance, there was no question of financial indemnity nor of occupation pending payment. It was too patent that the whole resource of the country would be needed to restore economic life and repair the material damage which had been wrought. And as for occupation, a precedent for which had been set after the 1914-1918 War, humiliation was complete in any case without adoption of the childish pretext for further abasement by planting German troops in certain selected towns. The world would still live by inter-trade of nations and the lesson of the earlier war, that confiscation rebounded to the detriment of the confiscator, was well remembered by the acute ministers who advised the Hitlerian succession. Prosperity, they knew, was the best neighbour of all.

The ex-German Colonies throughout the world had been restored to their former ownership as a matter of course, and with them certain liberal snippings, where juxtaposition permitted, which rounded them off and enlarged the boundaries according to nature's features.

British Somaliland and Aden had fallen as of right to Italy in furtherance of that country's ambition to create a "Magna Italia" in North-East Africa and, with the same object in view, Egypt and the Egyptian Sudan, had been transferred from British suzerainty. But Kenya Colony and Uganda Province were left as before.

To balance this great access of territory to Italy, Germany had possessed herself of the French Cameroons and the Nyassa-

land Protectorate, but that was all. It must be repeated that she was not exorbitant. It would seem that she had it at heart to proclaim a principle of studied moderation.

"Under the stress of unfair treatment" she might have been heard to pronounce, "and of an unequal share of the earth and the earth's benefits, we were compelled to assert our rights. We have done so and, to show our bona-fide intention, we will not plant our foot on the neck of the conquered."

In the same way, she did not attempt to alter the status of the Dominions. To have done so in the case of Canada would have been to provoke conflict with the United States of America, while the others, South Africa, Australia and New Zealand, were too autonomous and too far away for air conquest and control.

The fly in the ointment, if fly there was, lay in this—that the armistice convention and the subsequent treaty, the one stipulating and the other confirming, had contained certain "favoured-nation" clauses which did in fact have a mortgage value and effect over Britain's Colonies and Dominions. As regarded the latter, for instance, German emigration was to be free and all other strictly controlled, though whether designed as a population outlet or as a method of Germanification time was not able to show.

As regards the Colonies of Great Britain, their products were to enter Germany duty-free for a term of twenty-five years, the money thus lost to her customs revenue to be made good by a graduated lowering of price.

It must not be concluded that the mother country had been able to impose these conditions without demur and protest on the part of Colony and Dominion alike. Proclamations of independence were hinted at in the case of one and armed rebellion in the case of one or two of the others. The protec-

tion afforded by the British Navy, which had been to the Dominions thier strongest link with England, apart from sentiments of loyalty to the Crown, had now been shown to be illusive. Whatever the future held they had now to rely on themselves solely for protection by building up a strong Air Force. It was the only way. Why not be independent and be done with it?

But in the end they had thought better of it. Independence would be to be naked and out in the cold—an uncomfortable sensation in a warring world—even though islanded by distance. Also loyalty came back, and with it a warm-hearted desire to share the burden as one with England, and not to desert her in her extremity. Thus they had signed, believing perhaps that England would rise Phoenix-like and resume her Imperial sway.

The militancy in East Africa and the rebellious murmurings from other Colonies soon subsided. The choice was presented of annexation or submission and the latter choice was quickly selected. So did things compose themselves throughout the British Empire at large, until the question of India alone remained to settle.

Here things had been difficult indeed. Malcontents had taken prompt advantage of the situation by inciting the masses to revolt. The Indian princes, for the most part, had remained staunch, seeing their only safety to lie in upholding British sovereignty, but there had been grievous fighting over the whole, vast peninsula. Rioting and looting, racial, religious and faction fighting, had broken out in the most widespread sense. Repression measures had been of a particularly distasteful nature to the hard-pressed garrison because the rebels and the rioters, fired with stories of disaster to England and freedom from the hated rule for themselves, ill-armed and

reckless, could be dispersed only by the slaughterous method of bombing wholesale from the air.

The Indian Army, certain units of which were suspected of being sown with revolutionary seed, stood up well to the ordeal of firing on their own countrymen, and only a few regiments had been obliged to surrender their arms for disloyalty. India was on the eve of being granted complete Dominion status, but this recrudescence of violence, insurrection as it very nearly became, caused a change of policy which was even countenanced by native leaders of the better, and more influential, sort who had been loudest in demanding it. One curious and unsuspected fact emerged. Those regiments of the Native Army were most dependable which had been longest Indianized. The binding in these cases between officers and men in the trial of civil war had proved, not firm and fast so much, but elastically stronger.

When things were at their worst, and the whole country afire with rebellion, the North-West Frontier erupted. But at the time reinforcement had been on the way. The dispossessed British garrison from Egypt and the Sudan, collecting those of Aden and Somaliland on the way, had been rushed by the consent of Italy to Bombay. The troops arrived in time to save affairs on the Frontier and thereafter, despite many smouldering fires of rebellion in the less accessible parts of the country, which required constant watching, the insurrection died down and was finally extinguished.

The world outside had watched with bated breath the composition of affairs after the capitulations of England and France, expectant of wholesale confiscations of territory, an iron rule, and almost unbearable conditions of life. But none of these things had happened and the world marvelled at the moderation of the conquerors, whose ruthless methods during

the brief phase of war had seemed to argue the contrary. Not only had France and Britain still an Empire left, only very slightly dismembered, but the victors had evinced no active desire to interfere with the running of it. India at least, it had been thought, so rich a prize as that, must fall into the maw of Germany.

The truth was of course that neither of the conqueror States, in vulgar language, were anxious to bite off more than they could chew. Neither of them had large Imperial experience and they both desired a settled world in which to further their affairs. If the complicated machinery of Empire continued to run at Britain's cost, and with British engineers of State to care for its maintenance, themselves risking the attendant dangers of explosion in the works, then why go to endless trouble and expense for the mere sake of re-painting the map. The fruits of the earth would never again be monopolized. They would see to that. They would take their requirements and the rest of the world could pool the remainder. That also they would see to, and that was enough.

Turn we now to the home country, to England herself, and describe the period of reconstruction which immediately succeeded the most short-lived war on record.

The first care had been, after dealing with the human wreckage, to restore the life-giving services of the country, such as food and water, and to provide housing for the multitude whose homes had been destroyed. Labour was conscripted for both processes and communally fed and clothed. A capital levy was imposed and by that means, by extra taxation, by internal and external loans, the latter largely subscribed to in the United States of America, huge sums became available for the purchase of food, raw material, supplies and every other form of requirement for the resurrection of

national life. Luxury living died a natural death. A semi-socialistic drift set in quite naturally and unopposedly. The entire population in its deep humiliation became fused into one mass, imbued only with the single idea of lifting the country from the depth of its despair.

The able-bodied of all classes worked shoulder to shoulder at their skilled and unskilled occupations and the intermingling proved what had often been preached, that neither fine feathers nor fustian make the man, but only a common decency of disposition and an opportunity in common to bring out the good which lies in all human nature.

One certain manifestation of feeling, directly attributable to city bombing and a distinct aid to re-housing, early evinced itself. This was a large-scale "back to the land" movement, widespread throughout the country. It was spontaneous. Not only those who had experienced the horror of air attack in the congested spaces of London and the other four main cities, Bristol, Liverpool, Newcastle and Hull, but those also who had it by hearsay, imagining the rest, were alike equally disinclined to dwell again in crowded community. It was not the actual dread of repetition which was operating on their minds. It was shock they were suffering from, and just as a carriage accident might make one fearful of horses so had their experiences made them terrified of city life.

Not all, of course, who felt like this were in a position to put the desire into practice. But those who could, did so. The ruling authorities were quick to see the benefit of the movement, to take advantage of it, and to encourage it to the full extent of their power. An Act was quickly passed giving wide discretionary powers to County Councils for the acquisition of land for the purpose. Compensation was paid to estate-owners, and to the proprietors of big farm-lands, for the forced acquisi-

tion of acreage. Hutments were rapidly thrown up where accommodation was lacking. Government loans were granted for the purchase of utensils, seed and stock. Advice was available free of charge.

It amounted, in a legislative sense, to an extension of the Small-Holder's Act, which had hung fire for so long owing to the inertia of County authorities and their inborn disposition to obstruct any form of landlord dispossession. Many owners, only too glad to rid themselves of an embarrassment in the spare days which they saw ahead, offered their country mansions for sale as well, and these, if suitable at all, were acquired for the purpose of agricultural training-centres for the new settlers, who could there obtain the best advice on whatever farming line they had taken up.

In this way England became again a country with a large agricultural industry. Two birds were killed with one stone. At one and the selfsame time the population was largely redistributed, all main cities thus avoiding the teeming quarters, and the ant-like slum-life which had hideously characterized them until then; and, equally, the thorny question of food supplies in time of future war was thus largely solved.

A determination had been come to that a full year's supply of essential food commodities should be stored; and stored, moreover, in bomb- and gas-proof depositories so arranged as to give the least possible opportunity to sabotage agency.

To this end underground granaries, meat stores, and other food depositories, were located in certain topographically ill-defined places, corresponding to the ten food areas into which the British Isles had been divided. Area Commissioners were appointed who worked executively through big corporations charged with the acquisition, management, supervision, and especially the turnover, of the stocks.

It had been a vast undertaking and had proceeded, contemporaneously, as far as possible, with dock rebuilding, reservoir restoration, house construction, and the many other post-war activities of immediate necessity to enable the life of the community to continue. In wheat alone the reserve required amounted to seven million tons. Until the land settlement schemes were sufficiently advanced, the new arable productive, and the grazing stocks adequate, it had been still necessary to import three hundred million pounds' worth of essential food-stuffs, of which huge sums grain and chilled and frozen meat, accounted for at least half.

The nation became a hive of industry with the workshops clanging day and night. The comparison, in fact, was to that of bees, ceaselessly at work to provide for future needs; and also to that of ants, patiently reconstructing the nest on the self-same spot which some catastrophe had overtaken.

A new spirit, as well, animated the formerly rich and upper classes. They made the happy discovery that enough was undoubtedly as good as a feast; that plain living was in reality a relief from luxury; that one house was sufficient to live in; and that the bread of idleness was ill-baked.

Another vital need had been immediately seen to. This was the production of oil from coal by hydrogenation and by the low-temperature carbonization process. Pithead plants were everywhere erected, and the demand for coke and gas did not serve, as had been prophesied by pessimists, to limit the tonnage of hewn coal available for oil production.

The Joint Electricity Authority, or the "Grid System" as it was universally known, was left to carry on supply as before. It had proved itself triumphantly to be an asset of national defence, rather than a source of weakness during the brief war.

There had been much gloomy foreboding beforehand and prediction that the concentration of generation in large capital stations would result in area after area being put out of action by bomb explosion. Critics claimed also that the pylons carrying the high-tension cables, which criss-crossed the country in all directions to the despair of landscape-loving people, would be a particular source of danger, saying that it would necessitate the posting of a sentry at the foot of each girder tower. They had been proved wrong.

The disaster to the Chelsea Power House at Lots Road would seem to have established their claim, but in effect it non-suited it. It was because the difference in "frequency" between the L.P.T.B. installation and that of the Joint Electricity Authority had prevented amalgamation except at enormous expense that the former had remained in isolation. The Tube tragedy could not have been prevented. It was a matter of moments and no "stand-by" could have been operated quickly enough to stay the panic. But the power for lighting and ventilation could have been quickly brought on again, thus diminishing the loss of life, and the trains could have been got working again within a very short time.

It was the experience at Liverpool, and the other sea-board cities which had undergone disastrous bomb attack, that put the value of the "Grid" beyond a doubt. In those cases supply had been restored from outside within a very reasonable time, the huge loads being taken up by alternative generating-stations in neighbouring areas without disturbance or dislocation. As a result of the hideous experience, the Chelsea Power House was rebuilt to link up with the "Grid" and the other power stations for the L.P.T.B. at Neasden and Greenwich were quickly converted to do so.

And so proceeded the work of restoration, and of guarding

WAR OVER ENGLAND

against the future. Discontent there was none, for all were busy at work. Wealth was much more evenly distributed, and that fact alone stifled the communistic war-cry. Retail trade was everywhere brisk at lowered prices, because there was money in pockets to spend and unemployment was nil. It was a slow change-over of England to a basis of increasing self-support, less and less sterling being required as time went on for foreign and Dominion trade in all except those commodities and raw materials which her own soil did not produce.

Ever since the Great War England had too often played "boy" to the foreign aircraft "wolf," and both fable and history had parallel results. The boy was gobbled and that ends his tale. But England rose again.

CHAPTER TWO

RECONSTRUCTION OF DEFENCE

TIME marched on. Twenty years passed away without the peace of Western Europe being again disturbed. Other wars took place, notably a final conflict between Russia and Japan, which ended with the complete defeat of the latter Power, very much to the world satisfaction. It took a load of worry and anxiety from the United States of America who had always thought it would fall to their lot to curb Japanese imperialism through trial by battle. An immediate result was that China, although rapidly sovietized, again became consolidated and strong. But international treaty rights were not disregarded and trade increased.

In Eastern Europe the result of the Russo-Japanese War had altogether a steadying effect. It showed again, for one thing, how air power combined with geographical advantage, makes an assailant practically invincible; and for another, it operated to create quietude between Germany and Poland on the one side and the Soviet Union on the other. Russia, in a word, had shown herself too strong to be attacked with impunity, and she was herself too occupied with the aftermath of her Far Eastern conquest to disturb the peace on her western boundary. The political waters, in consequence, froze in those parts and it looked as if stability had set in for good.

The issue of the conflict between Russia and Japan is instructive. Here again it had been a short war. The Soviet Union

had amassed a great air fleet and established a chain of aerodromes, fully equipped, across Siberia in connection with the Trans-Siberian Railway. In this way she began quickly to step up material into the Maritime Province and the northern half of Sakhalin. It was a sort of "halma" progress across the Asian board, very quietly conducted. Long-range bombers comprised the main material of the Soviet air fleet, the range of which out and back enabled Japan's enemy to bomb all her teeming cities, so inflammable as they were in spite of steel girder-construction by which method some quarters had been rebuilt.

Japan knew well of the preparations, countering them to the utmost extent by reinforcing the mainland with troops, guns, and aircraft, and finally advancing north towards the Amur. In reply Russia launched her air armada and the war was on.

Within a few days and nights Japan proposed acceptable terms. Her cities were in danger of complete demolition and were largely ruined. She was powerless to resist the bombing attacks of the Soviet Air Force. In vain she had attempted reprisals and succeeded, in fact, in bombing Marlinsk, Khabarovka, and Vladivostok. But this was a small return for the ruination of Yokohama, Tokio, Kioto, Osaka, Nagasaki, Hakodata, and many other seething centres of population. She could not attain the Soviet aerodromes with any great success because they were widely spread, well concealed, and secretly constructed. Russia had a large, well-defined bull's-eye to aim at, and Japan an amorphous target. Moreover, and this had been a great world surprise, Japanese invincibility on the ground was by no means repeated in the air. Her pilots were brave but clumsy, neither good navigators nor efficient fighters, and she was further handicapped by the tempestuous

air of that region. Air power, rightly applied, had proved itself once more.

Another centre of disturbance had been a troublesome mutiny of Italy's black army in Abyssinia, which strained her resources and weakened her man-power in Europe.

These outside events have been recorded, though somewhat foreign to the purpose at hand, because of their repercussions on the affairs of Western Europe in general, and on those of England and France in particular.

As regards the latter country, Italy's preoccupation in Abyssinia, coupled with that Power's lively endeavour to persuade Germany to cede to her the French Cameroons, so that her possessions might abut on the Gulf of Guinea, had resulted in considerable friction between the two. France was not slow to take advantage of the situation and began, covertly, to strengthen her active defences. Her cities and industrial centres were already protected from air attack by the most modern inventions and devices. This right had been accorded her in the final treaty terms of the Short War. But her permissible Air Force, for colonial pacification, police work, and civil order at home, had been very restricted. Now, seeing a likelihood as will always happen, of thieves falling out, she addressed herself to the task of re-arming in secret.

Turning now to England, we find that country in a fair way to reckon herself again strong or, at any rate, thoroughly convalescent. She had repaired the damage everywhere; she had provisioned herself to sustain prolonged blockade; and she had completely re-organized her system of defence.

This latter included not only a passive form of protection from air attack, later to be described, which her experts pronounced invulnerable as far as human prediction could go, but also a complete transformation of her fighting services. She

had not been equally restricted with France as to the size of her Air Force, and her navy and army had hardly received mention in the final treaty. Germany, for her own reasons, had not been disposed to weaken England too much after she had lain defeated. Germany had not felt any missionary urge to police the world. She shrewdly recognized that the defeat of England was quite a different matter to the absorption of the British Empire; and that working machinery were best left undisturbed. Hornets even in captivity are hornets just the same, for if the sting is drawn they die and what would be the good of that?

The simile is not inapt for there were the Dominions to reckon with, which it was not possible to keep in subjection, besides a large British population in the various colonies, able to administrate, and necessary to stamp out signs of native rebellion. African insurgence, for instance, was not to be scoffed at. The "White Towers of Babel," and other native societies in secret organization from end to end of the continent, were known to be in constant communication with each other, and an uprising successful in its initial stages, might spread like a rabid disease and engulf white civilization. The numbers were there, the organization existed, and it is hard to stem flood waters.

For these and other similar reasons, no doubt, England had been allowed, militarily speaking, to carry on, and on lines of proven necessity she had done so. The principles and policies which had governed her reconstruction were as follows.

The Air Force became supreme in all things. There was an Air Force Fleet Arm, and an Air Force Military Wing, both subservient to the former and departmentally adjunct. To accentuate in the minds of the people the change which had

come over the face of things the Ministry in supreme control was renamed the Ministry of Air Defence.

One small sign of this new order of things deserves special mention. Nelson's Column in Trafalgar Square had been gravely damaged in the air attacks and the question of repair came up for early consideration. The pedestal was badly knocked about, the columnar construction here and there defaced, and the Admiral's figure at the summit considerably chipped. Scaffolding was erected and, as a first step, Lord Nelson was hauled down for workshop reparation.

This repair item had been ready before the rest and the figure was temporarily placed on the vacant pedestal which existed at the left-hand top corner of the Square looking towards the National Gallery, which had miraculously escaped damage. But when the column was ready again Nelson was not put on top. It was felt that he had been too much of an idol in the past, turning men's thoughts to sea-power only as the source of England's might, and that as such his feet were now of clay. Accordingly the hero of Trafalgar was left on his lowly perch, partnering George IV on horseback, and instead an eagle with outstretched wings, typical of air power, was mounted in his place.

As regards the Air Force Fleet Arm, capital ships were abolished. Submarines were built in large numbers and of varying size, some for torpedo and gun attack, some for aircraft-carrying purposes, and others, of larger bulk still, for the transport of supplies. In addition there were a great number of mosquito craft, totally unarmoured in any way and very fast, averaging 1,000 tons and capable of partial submersion. They had light guns on mountings adaptable for use against both surface ships and aircraft, torpedo tubes, and a powerful searchlight installation. Their main use was convoy protection

within a hundred or so miles of port from submarine attack, and otherwise they were in attendance on a new form of cruiser for the same purpose, using her as a parent ship for store replenishment and refuelling when far out at sea.

These cruisers were known as aircraft-cruisers and were primarily for convoy protection also, along the ocean shipping lanes. They carried a few fast scouts and the rest of their flying equipment consisted of bombers, capable of leaving the deck by catapulting with a two-ton load on board. They had 9-inch guns, an effective anti-aircraft armament and each carried in addition one or more auto-giros for long-range reconnaissance by night. There was no large expanse of landing-deck to increase vulnerability and delay movement while manœuvring into position for the wind. Instead, the returning aircraft, none of which had under-carriages, were received into an elongated, overhead, metal cradle, with a bottom groove shaped to fit their hulls, into which they slid and were brought up by a braking arrangement within a hundred feet of run.

Should they meet an enemy of superior armament in time of war on the high seas, still, it was claimed, they had little to fear. Their scouts would discover him, wireless his whereabouts, and the bombers could descend on him and sink him while he was yet unaware that danger threatened. The only thing they had to fear would be surprise, which would be their own fault, or a lucky bomb descending from the sub-stratosphere which nothing could prevent.

All merchant shipping proceeded under convoy in these days. There was no exception to the rule on the part of any nation which possessed an important mercantile marine. The lesson had been only too well learnt that war came unannounced, even though the face of politics wore a smile. It was

reversion to conditions on the Spanish Main, when war at sea was endemic and a sail seen might belong to any of the many countries which were perpetually at loggerheads; or to the era of Napoleonic wars during which, for safety's sake, the convoy system had become the rule.

In addition, cargo-vessels of a certain tonnage and over, those conveying freight scheduled as necessities, and a few the owners of which applied for the protection, were equipped as a normal outfitting arrangement with anti-aircraft armament manned by a skilled personnel, supplied from the Ministry of Air Defence. A convoy of fifty ships, with its attendant aircraft cruisers, in this way became a huge floating battery of a hundred guns or more. Quite capable of looking after itself from surface or below-water attack, it was also calculated to fend off low- or medium-height attack from the air. But it remained a possible prey to the high-altitude flyer, rapidly approaching stratosphere heights, which could approach unobserved, remain beyond the reach of searchlight or gun, and drop the lucky bomb.

The above picture is not of England alone. Most of the other nations, large and small, had adopted similar arrangements to guard against the fate of England and France when these two countries had been overwhelmed at sea, as well as on land, by air surprise. To find enough money for it all was a wearisome burden on national exchequers. The free Press of the world thundered against the ridiculous state of affairs, saying that life was intolerable under the shadow of fear. Much better, the writers said, to resign life itself than to live thus, and they sighed for the opportunity which was lost, long, long ago, to reform the League of Nations and hammer it into an instrument which would ensure world peace.

Such were the conditions affecting England's floating popula-

tion, and, in some measure, the life of her seaport cities. Let us see how the dreadful necessity of going armed to the teeth rebounded on the main mass of the people. But first it will be well to describe how the Military Wing, and the central Air Force itself, were adapted to the need at hand.

A saving had been effected on what was formerly known as the Army Vote, chiefly on account of a drastic decision and the consequent reorganization. It was determined that England would never again, whatever betide, land troops in France, or any other place in Europe, to fulfil the purpose of an Expeditionary Force. If help were required, if the situation should demand it, or if a combination of circumstances made interference advisable, then the employment of air force must meet the case.

This meant nothing less than that the large Territorial and late Regular Army establishments could be largely reduced. The Territorials were converted *en bloc* into anti-aircraft troops for the service of the guns, searchlights, and listening-posts, and those over and above requirements were disbanded. The retaining fee was high, they were highly trained, and the duty pay was good. Commissioning and enlistment became popular and there was a long carefully-selected, waiting list for both officers and other ranks. So much for the Territorials, who became a *corps d'élite* of fine physique and perfect discipline, indistinguishable from the regulars in parade appearance and equally regarded by the mass of the population.

The old Army, which had formerly consisted of nursery battalions to feed the forces in India, plus a skeleton array to be augmented by reservists in case of emergency nearer home, was faded into nothingness. The latter function was no longer in contemplation, so that everything in excess of the

main requirement could be dispensed with. Tidworth became a training-centre for the Territorials, with the whole of Salisbury Plain as barrack-yard, and Aldershot became the recruitment and training-headquarters for the young soldiers, horse, foot and gun, who were destined for India, and the few odd places still within the Empire where British troops were stationed.

For further simplification and, in fact, economy, regimental nomenclature was dropped, though numerals were retained, and every soldier, be he hussar, dragoon, fusilier or light infantryman, became just cavalry or infantry of the line with a number on his collar to show the unit he belonged to. The regiments did not come home at all. They were permanently stationed. Seven years was the period of enlistment, and the drafts from home replaced the time-expired men with a smooth and even circulation, and with a minimum of cost.

A word about the officer establishment of the Military Wing. Woolwich and Sandhurst continued to function as formerly; the bi-annual output being carefully regulated to fill vacancies in accordance with a strict retiring regulation. There were thus three main categories of officers. Firstly, there were those overseas, staff and regimental, in executive control. Secondly, there were those at home occupied with the training of recruit soldiers at Aldershot, and of recruit officers at Catterick, which had been converted for that purpose. And thirdly, there were the young officers themselves, either cadets doing initial preparation at the colleges, newly commissioned at Catterick for a year's preliminary training, or those on a further year of probation with the overseas units to which they would eventually belong.

An elastic system of transfer and voluntary interchange enabled special tastes and climates to be catered for, and pre-

vented injurious stagnation when, in the opinion of the officers commanding, a change was desirable.

And now to describe in broad outline the head and front of the whole system of national defence, the Air Force itself.

The backbone of defence was a large armada of long-range bombers, capable of flying 2,000 miles, and of carrying a bomb load amounting to $2\frac{1}{2}$ tons. This was the hammer for dealing a crushing reprisal blow, or for anticipating an enemy's lead-off, the mere existence of which would act as an effectual deterrent to war lightly undertaken. The other great Powers, France excepted, possessed a similar weapon, each in its particular national design, and the world cost was enormous. But even so, the peace era might have been perpetual, fully justifying the fearful expense on that ground alone, had not Great Britain watched unceasingly for an opportunity to regain her lost prestige. She had reason to believe, moreover, that she owned a superior technique.

The "geodetic" principle of construction had been improved to perfection and was in general use throughout the British Air Force. This not only went for weight-saving to the amount of 50 per cent. over former methods of construction, but largely reduced aircraft vulnerability from air and ground attack by diminishing the vital area.

For longer distances, if need be, refuelling from air-tankers had been devised on a basis of commercial usage. Towage also had been discovered as a means to increase the efficiency of air power. By this means towed gliders, with only explosive aboard, accompanied a proportion of the bombers and were jettisoned over a target area of large surface extent, such as a city or an industrial district.

An ingenious method had also been devised for protecting the bomber from the fighter in the circumstances of a tail-on

attack, which was most to be feared. It was called the "air-mine," and consisted of a streamlined container, filled with explosive and provided with horizontal fins, which could be unrolled from a drum in the bomber's fuselage to a distance, as necessary, of a thousand feet. It would either be exploded by electrical contact or by collision with the fighter, and in the latter case destruction was certain.

The bombers were further equipped with a gassing apparatus for the further discomfiture of enemy pilots. A mixture of "nose gas," "choking gas," and "blister gas" could be ejected in cloud formation. The former penetrated a mask and caused violent vomiting, and when the mask was pulled off as unbearable to be worn longer the other gases did their work.

The "robot" aircraft had also become a practical proposition for more than target practice. It was now potent to destroy. Under wireless control, either from the ground, or from a parent aircraft flying far behind, and kept gyroscopically on an even keel and on its course, these mechanical marvels had a range of 500 miles and could carry any form of death-dealing load, high explosive, incendiaries, gas or bacteria, up to a weight of 1,000 pounds.

Against air attack, England had come now to rely more on the various active and passive forms of defence on and from the ground than on the fighter versus bomber tactics of a former day. It was argued that an enemy would have also developed a protection system for his bombers on somewhat similar lines, though not, it was hoped, so effectively. Also, the maintenance of a large fighter-aircraft establishment was not only a greatly added expense but its existence detracted from the strength of the hammer-blow bombing-fleet by the exact amount of its cost. A certain number of fighters, however, had been developed for the purpose of stratospheric

flight, as and when aeronautical technique advanced to that stage of progress.

Otherwise there were vast training-centres for pilotage and all other forms of technical knowledge, which absorbed as much cost in unkeep as the active service bombing-armada itself. In particular, Salisbury Plain was allotted for the purpose of training the ground organizations in all forms of attack against aircraft and a large practice establishment of aeroplanes was stationed on the spot.

And now, because it will reveal conditions of life during this epoch, when the bubble of peace was again about to burst, we will describe the passive and active forms of ground defence which employed the Territorial personnel and enjoined on the population at large an iron discipline under which they did not murmur.

CHAPTER THREE

ENGLAND READY

THE breathing space in Western Europe between the Short War and the Last War continued. No nation accounted this period in any other light. Each knew that another clash was inevitable and prepared for the day.

Some adopted one method of defence, some another. Germany and Italy, for instance, in close military alliance despite the source of irritation which the question of the Brenner Pass had again become, clung to aviation as the main means of protection for their cities, guns, searchlights and other ground defences being only subsidiary thereto.

France took up a half-way position. She had been permitted without constraint to develop aircraft strictly for Home Defence with a short range of action, but, as already stated, long-distance bombers had been forbidden her. In consequence her aircraft energy of construction had been devoted to the perfection of fighting types, and hand in hand with this had gone a ground organization for the passive protection of her main centres of population and industry.

England, on the other hand, had specialized wholly in a system of defence in which aircraft, for purposes of protection, played no part. She relied on making the air uninhabitable overhead by various forms of active defence. She had evolved a variety of measures for the passive protection of her people and their means of life. Added to this she was in process of carrying out a rebuilding plan on the "Le Corbusier" prin-

ciple, with the object eventually of immunizing her cities and towns against every form of air attack.

Each other country possessed an air fleet of bombardment as striking force and for no other purpose than that of a surprise offensive followed by a succession of hammer blows, though France, it is true, was behindhand in that respect owing to the restriction which had been put upon her. But the moment surveillance had been withdrawn she had applied herself to the attainment of equality in this respect with the neighbour nations.

In a particular sense, however, England's striking force differed from that of other countries. It had been constructed and trained as an air-battle fleet as well, not only as a bombing armada. It seemed inescapable logic to the counsellors of the Minister for Air Defence that air mastery must precede all other means of victory. At the time of the Short War this had been the main idea, and it was so still.

For various reasons it had not succeeded then—chiefly because the enemy's alternative aerodrome system had defeated the prepared plan. Similar tactics would have still less chance of success now, it was argued, because underground construction had become a universal rule, even for the purposes of civil aviation. But the principle must be right, they said, and traditionally it had been adhered to.

Supremacy in the air meant certain victory. One's own population was relieved from all anxiety on their own account, and released from danger. Undivided attention could then be given to the subjection of the enemy people, the Government of whom would have no option but to sue for peace on any terms. Huge air armadas would be flying to and fro, in rank on rank by day, and in scattered formation by night. An air battle must be brought on in which the fighting must be a

outrance, for the victor, however weakened, would reap the full reward.

Such was the British strategy, to dare all to win all, confident in superior equipment and the skill and courage of her fighting-men. Pending the air battle, bombing could proceed and, meanwhile, by other means than aircraft, the Home Country could defend itself. It was aggressive strategy, determined by the fact that the air weapon was a weapon of attack like a bludgeon and not for use as a shield of defence.

A word about civil aviation. It had increased, enormously, but it had ceased to be regarded as a means of reinforcing national air forces. The reason was this.

Flying had become a normal method of transport to such an extent, and over such vast distances as well, that the brains of designers were continually employed to increase the size of civil aircraft so that more and more they could compete with road and rail and ship, and thus come to their commercial own. The consequence was that machines of 18,000 horsepower were produced, with passenger-carrying capacities of two or three hundred, and a wing-span of 600 feet. They were strongly built, but they were built to fly from A to B, as a liner sails, and not to twist and turn for necessity's sake as a military aircraft must. It was the same with ocean traffic. Here the development had been on still larger lines. The oceans had been artificially islanded in all directions, due entirely to American enterprise, and the seven seas were as safe to fly over in all sorts of weather as the Serpentine is to boat on.

The huge metal rafts which formed the islands could accommodate any number of aircraft. They had hotels and replenishment stores, and they truly linked the world. They possessed a military significance as well, for by their means aircraft concentration was now possible at a moment's notice, where

before an intervening waste of water had prevented it. In the Last War this was not without its use.

To return now to England, for a closer inspection of life there under the rule of the air.

The counter-measures produced in the course of time to prevent a repetition of the disaster of the Short War, were mainly in two groups. There was the active anti-aircraft defence, conducted by a highly trained personnel; and there were the purely passive forms, carried out by the people at large in obedience to rule and regulations.

The first consisted in general of anti-aircraft guns and machine-guns, the latter to guard against low-flying attack; of searchlights; of obstacles; and of aerial mines. In certain special localities these means were supplemented by smokes and camouflage.

The second group affected the civilian population and consisted of preventive measures, such as evacuation and the general education of the people, by press, publication, lecture and the screen, on the woe which could overtake an unprepared country. In addition there was drill and instruction on behaviour when the alarm went, the use of shelters, the wearing of masks and special clothing, emergency assistance to the gassed, and on the imperative necessity of not giving way to panic. Large numbers of people, in addition to municipal bodies, were voluntarily organized for the decontamination of gassed areas, as fire-fighters, and for the purpose of first aid in the case of ordinary injury.

But over and above all this, sure and steady progress was being made with a plan for the re-ordering of built-up areas which amounted to nothing less than a new architecture, and which would have in time achieved it if the outcome of the Last War had not rendered it superfluous. As it was, one new

town on the Sussex Downs was almost completed in the new style and will be briefly described. It will serve to show what England would have become in the course of a half-century as slum demolition was carried out, city extension planned, and population increase located. The place was called New Queenstown, but nicknamed "Noughts and Crosses" because that is what it looked like from the air.

In the main it consisted of fifteen-storied dwelling-towers, cruciform shaped as to ground plan. Each arm ended in a T-head and was similarly crossed twice between head and centre joining. From above they resembled two equal lengths of codfish backbone laid crosswise. The "noughts" of the town plan were marked by circular-shaped reservoirs, one to each group of four towers, these latter providing a never-failing supply of water for fire-fighting purposes whatever damage the mains or pumping-stations might have suffered.

The dwelling-towers were widely spaced and stood separate, nothing in the shape of built-up streets, or walled enclosures, which might retard the dispersion of gas, being permitted. The life of the place went on in these tall erections, each of which was connected with its neighbours by deeply-situated underground passages, quite easily excavated in the chalk. The walls were of concrete, as also the foundations, and an apron of concrete 12 feet thick, was laid as a wide footing, so that a bomb explosion nearby would not jeopardize the main structure. The flat roof was of reinforced concrete, 10 feet thick, and the attic storey was lumbered up with material, such as cement and compressed wool bags, best calculated to resist the passage of a bomb.

Each edifice was capable of housing 1,500 persons in the eight storeys beneath the attic, the remaining six, from the ground floor upwards, being dedicated to a different use. The

whole idea which prompted this new style of building was to obtain the maximum possible security at one and the same time against the three forms of aerial bombardment, high-explosive, gas, and incendiary bombs. The plan of the buildings was designed to afford a minimum surface on which a bomb might strike, and the constructional material of roof, walls, foundations and footing, was capable of resisting penetration or impact. The water-reservoirs secured the means of fighting flames if an incendiary should take effect.

As regarded gas protection, more necessary far than the other two, the inhabitants only dwelt in that high-up part of the building the altitude of which placed them out of reach of the low-lying gas clouds. They could breathe pure air at all times, and if necessity compelled them to go down the masks and special clothing which were universally provided was quite sufficient protection during a short absence.

The ground floor, and the five stories above it, were in each case adapted for non-living purposes. Here were situated the shops, markets, theatres, cinemas, restaurants, and all other amenities of town life for the use of the public at large in a sense of non-privacy. These lay within the gas zone, it is true, but they could be immediately evacuated in case of alarm and the people could ascend to their upper floors. In this way herding in subterranean shelters in conditions of fright, artificially ventilated, with the knowledge that gas lay all around outside, the danger of imprisonment from overhead collapse, and all the other serious objections to that form of security were avoided. Private life underwent a minimum of disturbance and the gas peril ceased to exist.

Otherwise the specimen town of "Noughts and Crosses" was also bomb-proof, as regarded its ordinary water service, its electricity supply and its telephone system. These were

canalized in concrete, underground conduits running side by side, simplifying inspection and repair, and permanently laid. Drainage was conducted in the same way. Lighting was diffused from the curb and one main switch could plunge the town in outside darkness. Overhead life proceeded normally in normal times and the life was happy.

New Queenstown was all but completed, but many other towns extensions were begun and, in particular, wholesale condemnation of slums and poor quarters meant that large sections of existing cities were being slowly transmogrified on the new plan.

Meanwhile all town and city dwellers were disciplined to obey the air-raid instructions. In every place classified as "exposed," meaning in general those containing 15,000 inhabitants or over, a Special Commission was appointed, ceaselessly vigilant to ensure smooth running of the machine of security in case of alarm.

There was periodical mask inspection. Shelters were allotted to every man, woman and child, and practice alarms were given at uncertain intervals to ensure compliance with regulation. Heavy industries were removed from centres of population and the workers were not permitted to reside in the vicinity. Under the former dispensation, by bombing certain areas the enemy could bring about material damage and loss of life at the same time, thus killing two birds with one stone. Now he had to choose deliberately between alternative targets and divide his energy.

In the biggest cities of all, London, Birmingham, Liverpool, Manchester, Sheffield, Leeds, Bristol, Hull, Bradford, Newcastle and Nottingham, with populations of a quarter of a million upwards, it was decided to evacuate, on the outbreak of war, all who were not necessary for continuing the public

services. They were to be distributed elsewhere on a preconceived plan in the surrounding districts.

This project, as a matter of course, could not be carried out experimentally, as with the sheltering system and the mask parade. It would have caused too much dislocation and been too interruptive of life and industry. None the less a great deal could be, and was, done to ensure that this partial evacuation would proceed with the requisite smoothness.

The cities were divided off into small districts according to plan, each quarter parcelled out to number 10,000 head of inhabitants as near as might be. Each district had its allotted day, once a quarter, and on these dates the evacuees were enjoined to gather at the specified assembly places. They wore armlets, green for train-going, red for road coach travel, and yellow for the use of private vehicles. Each armlet moreover, had a tag attached on which was lettered the terminal point, small town, village, farm or country house, where the wearers would be transferred to the care of reception organizations and thence further distributed.

The transport arrangements were similarly practised. In the case of a railway company it was only considered necessary that a certificate should be rendered to the effect that sufficient rolling-stock could be made available by a given hour. But the buses and coaches were required to draw up at the embussing places, the drivers were obliged to show their written instructions, and they were questioned as to the routes of exits from the city and as to the road beyond. This transport assembly did not take place on the day the people were turned out for practice for reasons of congestion, but with the owners of private vehicles it was different. They were obliged to parade with their vehicles and thus demonstrate that they were qualified for the privilege of a yellow armlet.

Thus is a picture of workaday England to be presented. There was no plenty in the land, but a sufficiency. The idle and the rich as separate classes had practically died out. Government was strong, and the Opposition was only critical of minutiae, not of the manner, nor the method, in which the safety of the country was being preserved.

The Government also had adapted itself to the precautionary measures necessary. It also possessed an evacuation plan. The Dukeries had been selected for the accommodation of skeletonized Departments of State and, twice a year, it was law that administration should proceed from that district for the period of a month.

Foreign onlookers marvelled that the people of England bore the disciplinary burden. The same sort of things were going on, it is true, in countries abroad, but not with the same system—not with the same vigour and relentless push, and, above all, not with the same genius for leadership on the part of Officers of State.

It remains to specify in some detail the military system of defence, for the curtain is about to be drawn up on the Last War.

A superior system of defence by means of obstacles had been devised. In general this consisted of helium-filled balloons which, although captive, were capable of ascending to 20,000 feet except in the most violent winds. The discovery of a new, light fabric, gas-tight and strong, and of a new form of cable-drawing, permitted this height to be attained. To the balloon was attached a quantity of high-explosive which could be detonated electrically from the ground or, alternatively, exploded by contact in the case of an aircraft coming into collision with either the balloon itself, the attachment, or the "brianz" composing this air mine. A further aid to height

WAR OVER ENGLAND

was the arrangement on a single-cable attachment of more than one balloon, in tandem, or in threes and fours. The concussion effect of detonation was calculated to destroy a machine in the near vicinity or seriously impair its efficiency further away, so that it would be forced to land. A proportion of these balloons were furnished with "white phosphorous" rockets, fired also by electrical contact, the spray of which on bursting enveloped a considerable cubic area, to the endangerment of hostile aircraft flying above the balloon ceiling.

In addition, an immense number of smaller, free balloons were available for release, each bearing a due quantity of high-explosive, and ascending from various alternative balloon depots according to the strength and direction of the wind at high altitude.

In this way the air over a large city, such as London, was clustered with these portentous obstacles from a height of 3,000 feet upwards. Below that the perimeter of large cities was defended by the old apron-balloon system, vastly improved since the long ago Great War, with strings dependent between the balloon supports which were a grave danger to aircraft flying into them.

The big towns and cities were obliged to provide the "balloon barrage" as it was called, at municipal expense. It was a purely passive defence and did not call for the services of a highly trained personnel. In these circumstances, where only civilian defence was involved, it was thought both suitable and conducive to a higher state of alertness and efficiency that the places should look after themselves.

Smaller centres of population were free to defend themselves in the same way. It was their own concern. Many did so, the expense being defrayed by subscription or by the gift of a local rich man, where such survived.

A curious development arose. It was not uncommon for individuals and small families to possess a "drachen" balloon of their own in some chosen locality. It was tethered at three or four places for greater security, and the idea was to ascend to a gentle height in case of hostilities, and thus be beyond the reach of gas and high-explosive. The winch, as in the case of the barrage balloons, was situated underground in a concrete chamber.

Great hope was entertained of the efficacy of the system, by night especially. Particularly were the free balloon mines regarded as protective, each capable of ascending to a certain height only, so that an air zone of depth as well as superficial area was thus mined. It was prophesied that the demoralization consequent on knowing that such things were about would go a long way to deter attack, and the practical certainty that potential enemies were similarly equipped created no misgiving. Protection was the main thing.

Another passive defensive device was different coloured smokes, not for concealment of localities but for topographical disguise. To use smoke for concealment had been adjudged similar to hiding one's head under a blanket, or ostrich-like, burying one's head in the sand, for the very presence of the screen would apprise the enemy that something worth bombing lay beneath.

Smoke, therefore, was used to alter the ground appearance of things over the more likely sky-path approaches to defended areas. In this way the Thames Estuary and the Crouch Inlet, so useful to the enemy as guiding-marks to London, could be altered beyond recognition, the density and the colour-tint being adapted to the night. Similarly, the Humber, the Tyne, the Mersey, and Dee, the Severn, the Solent, Spithead and Southampton Water, were treated with the smoke device,

and British pilots sent up to see the effects reported remarkable difficulty in distinguishing objects and in finding the way. Smoke was also the concern of municipalities, the Ministry of Air Defence only taking part, as in the case of the balloon barrages, by means of periodical, official inspection.

There remains the active ground defences to describe in the form of anti-aircraft batteries, with their searchlight satellites, and the observing-cordons which ringed the country concentrically in rough half-circles, the chords to the north-east.

The guns in all cases were fixed, and consisted for the most part of 6-inch calibre, with a muzzle velocity of 2,650 feet a second, and a vertical range of 41,000 feet. They were imbedded in excavated, cylindrical chambers, well lined with concrete, and the guns of each battery were connected by underground galleries. The gunners did not aim, they merely set their guns to fire at a given elevation and fuse range, and in a particular direction in obedience to the telephoned orders of the battery commander who was located in a predictor-chamber some distance away.

To him came observations from the searchlights and listening-posts, and in the space of seconds the predictor-instrument calculated for him the precise position of the hostile aircraft when the shells should meet it in the sky.

It was a marvel of scientific ingenuity and, human error apart, the destruction of the hostile aircraft were certain but for one thing which was quite outside calculation. This was the manœuvring in three-dimensional space of the enemy pilots as soon as they came under searchlight observation.

Even with high muzzle-velocity, the speed of aircraft was such that, at 15,000 feet for instance, a machine could traverse

a distance of $2\frac{1}{2}$ miles in an infinite variety of ways while the shells were in the air. There was no means of overcoming this handicap except, perhaps, by concentrated barrage fire which would have worn out the guns in a night, and the probable, instead of the actual, position of the enemy remained the only basis of calculation.

The batteries were dispersed outside the perimeter of the localities they defended so as not to interfere with the balloon barrage. The larger towns and cities, and the important military stores and workshops, were thus defended, other localities being supplied with batteries if they cared to pay the expense of installation and upkeep.

Each battery possessed attendant searchlights so disposed that when those of a particular, protected locality, were on, a band of illuminated sky, 15 miles in depth, encircled it. They were of five million candle-power and threw a square grid instead of the ordinary circular beam. By this means, once located, the speed, direction and height of the hostile aircraft or formation could be calculated to a nicety and immediately transmitted to the battery commanders in their predictor-chambers.

Thus was the defence of England conducted in the days which preceded the Last War. The populace, busily employed for the forty hours of the working week, were drilled and instructed continually in measures of self-help. Architectural form was subordinated to the purpose of defence and living habits underwent a change. Protective measures for the home country, active and passive, were the chief consideration of Government after the bare wants of the body had been supplied.

It was a heavy burden, borne at crushing expense, but the people acquiesced. It was the choice between freedom and

WAR OVER ENGLAND

vassalage. If it came to war, at least this time they would be prepared. And most of all, to stave off the disaster of war, reliance was placed on the air fleet of battle and bombardment, no bigger perhaps than that of the potential enemy but more efficient, it was hoped, in every fighting quality.

CHAPTER FOUR

ALMOST THE DEATH OF CIVILIZATION

IN course of time the wheel came round again full-circle and the smouldering fire of European politics began to get the upper hand. Several factors contributed simultaneously to this state of affairs. We will take a rapid survey.

On the Continent, the twenty-five years period during which Germany had agreed to relinquish her ambition to absorb Austria was about to expire. Nazi intrigue was rife, Fascist susceptibility was aroused, and the relations between Italy and Germany became strained. In both countries, moreover, there was much subdued disaffection. The "armament race" had been too hot and prolonged, the protective measures for home defence had been financially overburdensome, and the standards of life were low. Added to this, in the case of Italy, the development of her Empire in North-East Africa had meant a continual sacrifice of blood and treasure, draining her strength like an open wound that will not heal. Dictatorship, as is well known, must be constantly bolstered by showy success or it will languish to the point, finally, of inanition and provide opportunity for the overthrow of the regime.

Austria, like a bone tugged at by two dogs, was used by both sides as a face-saving form of excitement, and the "Führer" of the one and the "Duce" of the other, neither wanting war, shouted brave rallying cries to their respective peoples.

Elsewhere on the Continent the tension was extreme. It is not necessary to recount in any detail the actual groupings and animosities, suffice it to say that the political trend was in the direction of a huddling together by the smaller countries for self-protection from the larger. The Balkan States and what had once been known as the "Little Entente," less Poland, thus formed a central bloc facing outwards to the five powerful Dictatorships of Italy, Germany, Poland, Russia and Turkey. Many times in history Europe had become an armed camp, but Air Force had not then been supreme, and war unfolded slowly. This time it resembled more a mews, with the hawks ever ready for flight, trained to kill, and with their talons sharpened to the finest of points. France stood alone, without alliances, and England did the same.

The latter country was troubled. Great as her resources were, the huge expenditure on defence and rearmament had at last undermined her credit. Loan-money from outside sources was unobtainable except at ruinous rates, and the people had no more to lend. The special dues she had to pay to Italy for transit through the Suez Canal, and the indirect Subsidy she had to pay to Germany for colonial produce, added to a condition rapidly becoming unbearable and resembled a state of vassalage. Her Dominions had become strong and their population had increased, but those facts had merely added to their own expenditure for defence and they were in no position to help.

An all-seeing eye looking down on the world in these days would have descried a most ridiculous state of affairs. It would have seen half of it armed to the teeth and fear-ridden. Not armed against any particular opponent, but just armed. The nations of one whole hemisphere had become infantile to the degree that they were like squabbling children, each one

saying to the other, "you hit me, and see what you'll get," and each one putting up his fists as he said it. The Americans North and South, themselves well armed though peaceable, looked on and wondered when the quarrel would break.

Only a spark was demanded, and the spark came. It came in this wise.

It leaked out that Germany and Italy had secretly composed their differences on the basis of a pact, the terms of which were as follows:

In return for Italy's agreement to the "Anschluss," Germany would lend support to the extension of the former country's African Empire to include Kenya Colony and Uganda.

As soon as this agreement became known beyond a doubt the British Government realized that the hour was at hand. Twenty-five years ago England had been defeated, and had recognized defeat. For a quarter of a century she had observed the resultant Treaty, meanwhile arming herself against further aggression. Further aggression was now on the way, not resulting from dispute to which she herself was a party, but arising from terms of settlement between two countries who regarded her as a corpse for dismemberment. She was about to be parcelled out.

Knowing through bitter experience the uselessness of negotiation, and how it merely served as an obstacle to surprise, England wasted no time on protest or *pourparler*. Neither did she suggest combined action with her neighbour France. The temper of that country was uncertain, and her readiness was in doubt. She had been wracked of late by industrial strife and sabotage had impaired the efficiency of her workshops. Moreover, France was not involved in the *casus belli* and, in consequence, would hardly have been sympathetic in a quarrel not her own.

It was June, as on the last occasion a generation back, and the daylight hours were long. The word of preparation was given overnight, and from dawn till dark, the cities' surplus populations were evacuated according to plan. There was no hitch. The arrangements were complete and practice had made them perfect. By nightfall, everywhere except in London, the process had been carried out.

Meanwhile an iron censorship had clamped all communications with the Continent. Foreign outgoing mail was held up, cable offices were closed, and telephone calls were refused. The channel boat-services were discontinued, and civil aviation came to a standstill. Ships in home waters were ordered to make for port, and those on the high seas were instructed to turn back or seek whatever shelter was possible. England cut herself off from the Continent as completely as if she had been an island in the middle of an ocean. The connecting waters now were to be bridged only in one particular way; by the enemy air fleet, and by that of England; by the former on a purely bombing mission, and by the latter for battle as well combined.

Meanwhile, also, the last finishing touches were being put to the defence organization. There was no question of mobilization, for the country existed in no other state. The batteries, searchlights and all else which was Territorial responsibility, were always fully manned. The balloon barrages and the air-mines, were under municipal care and management, needing no military personnel; and neither did the guarding of special points, such as bridges and power houses, nor the patrolling of the grid-line to safeguard the pylons, against sabotage, by enemy agents. The Special Constabulary, and other voluntary organizations, fulfilled these duties.

Troops under training at the two main military camps,

Catterick and Aldershot, together with the officer cadets, were held for rush disposal at places where a danger of riot might occur, more particularly where aliens dwelt in large numbers.

It was truly a triumph of organization. Before the last glow had departed from the western sky, the country lay under its defences, the purely passive measures of protection being as completely carried out as the active.

In all the defended areas, comprising the cities, the towns and any place of peculiar or special importance, the inhabitants were settled in their assigned shelters, the indrawn air filtered, and the outgoing expelled under pressure to prevent entry of the heavier gas. Everyone was equipped with masks for emergency use, and to each shelter was appointed a trained ambulance worker, expert in gas protection. The fire brigades, twenty times increased in number since the burning of London in the Short War, were on the alert with their special decontaminating equipment, capable of fighting gas as well as flames. First Aid stations were ready and the members of the many and various voluntary organizations for ambulance work in general, and for dealing with gas casualties in particular, were at their posts.

Outside the defended areas, in the small towns, villages, scattered hamlets, and in farms and country dwellings, the inhabitants, their numbers swollen by emigration from the cities, had also their shelters and their measures of protection.

The policy of defence, built up on a system of ground resistance plus the battle-bombing air fleet for smashing the enemy on and over his own soil, was about to be put to the supreme test. Would it stand up to it? And if not, then what? The weather conditions were anticyclonic and it was a moonless sky. The airs were light and the balloons would ride high. The smoke would travel slowly as it drifted.

The Government calculated that the night might pass without attack, in which case a definite advantage would be gained. The evacuation process could be completed as regarded London, and the attitude of "ready" on the part of the people would have the value of a full-dress rehearsal before the opening night. For two things were obvious and well known universally as conditions of success. Firstly, the initial attack must be delivered by night for greater effect. Secondly, once declared thus, the attacks would proceed without intermission, day and night, so that no breathing-space for repair of damage, or new dispositions for defence, might be allowed to the enemy. These conditions, of course, were of universal application, and the first blow remained the all-important thing.

At the same time the British Government was determined, it may be quixotically, that the world should not accuse it of blood-guilt. Accordingly, at 10 p.m. a radio communication was broadcast to the world at large, and to the Governments of Germany and Italy in particular, setting forth in brief wording a summary of the situation. To the two enemy Governments immediate acknowledgment was requested and, within an hour, a public disavowal and denouncement of the secret pact. Failing either, the communique concluded, the British Government reserved the right to take whatever action it considered necessary.

This, in the state of tension which prevailed, and considering the hair-trigger nature of the air weapon, was equivalent, as all the world knew, to a declaration of war.

Neither acknowledgment nor disavowal were forthcoming—an offer of late-hour mediation was received from the United States of America, and tactfully declined. But no message of any sort was received from the two Governments concerned, and at 11.10 p.m. the first bombing formation, followed by

the others at intervals of three minutes, left the Norfolk area of concentration, bound for Berlin, 480 miles distant, and other carefully selected places.

Fifty-four squadrons, each consisting of fifteen bombers, departed in this fashion, flying in a formation resembling a pyramid with its base at right angles to the earth's surface.

The entire fleet was homogeneously equipped, and losses could be made good in quick time by the mass production methods which the system of replacement allowed. The life of a type had been given as five years, and at the end of each quinary period a complete change-over to the new design took place, already long selected. In this way tooling and jigging presented no cause of delay for the new type was already prepared for mass production.

Fifty-four squadrons departed, able for air attack and defence, as well as for bombing. Ten were destined for Berlin, eight for Frankfort, and six each for Dusseldorf, Hamburg, Leipzig, Bremen, Munster and Coblenz. After performing their mission they had orders to return by devious routes in order to elude the fighters which might have gathered to head them off on return. It was of first importance to conserve strength for the daylight air battle which the air-strategists looked on as the main function of the fleet, and one which would be decisive of the war. This was the more necessary inasmuch as it was shrewdly conjectured that the main Italian bombing force would be flown to German aerodromes for a combined attack on England in doubled strength.

The night passed in England without alarm, and the bombing-fleet, less casualties, were all back before the greying of dawn. The sub-stratospheric scouts were immediately dispatched for observation above the enemy frontier, relaying information by wireless at the first sign of activity.

It appeared that the enemy's state of readiness, that and the time necessary for the arrival of the Italian reinforcement, was not such as to make it possible for him to attack England that same night. To a certain extent he had been caught off guard, and, instead of an interchange of blows, England had struck the single one.

The bombers had carried out their mission. Their losses amounted to five per cent., all in combat with defending aircraft among which, they reported, the casualties were probably far greater. But from the enemy's anti-aircraft guns they had suffered no casualties whatever, and that for the very good reason that they had remained outside their range. The gliding-bombs had fulfilled every expectation.

This had been a closely guarded secret, quite unknown to the general public, and a special oath of secrecy had been administered to the Air Force to make it still safer.

Briefly, a means had been discovered through a combination of ballistics and aerodynamics of causing bombs, up to a certain weight, excluding the heavier, not to drop vertically but to descend at an angle with the earth's surface of 15 degrees in still air. This meant that a gliding-bomb dropped from a height of 15,000 feet would strike $7\frac{1}{2}$ miles away, thus enabling a bombing formation flying to windward of a large target like a city at 22,000 feet to bomb effectively at a distance of more than ten miles from its perimeter.

Such had been done in this case, and over one thousand five hundred tons of mixed high-explosive, gas and incendiary bombs had been distributed in Berlin and the various cities without any interference from the ground defence. The result could not, of necessity, be accurately known but the attack had obviously gone home.

The morning wore on, and there was no reprisal attack on

a large scale. Several "robot" attacks developed, signalled in each case by the English scouts in time for cover to be taken. They were not important, consisting as they did of only six units at a time. Damage was done on the outskirts of London in isolated cases. Otherwise the "robots" descended in open country, and in two cases the parent aircraft directing them were shot down by English scouts.

Dusseldorf and Cologne were attacked in the same way in the early afternoon, though more to keep the pot a-boiling than for effective results.

At 4 o'clock the bombing-fleet again took the air. Reliant on her defences, and on her defence organization; realizing that the enemy must be allowed no respite if decisive results were to be expected: England had determined on a bold measure. She would perpetrate a repeat attack by daylight, and dare the enemy fighters.

Five hours later the bombers returned, having lost on this occasion a further twelve per cent. of their members. But they returned triumphant. In most cases they had delivered their bombs successfully on the cities of overnight. Everywhere they had encountered enemy fighters and the claim was that two out of every three had either been destroyed or compelled to go down. It was vindication of the policy of the dual rôle, battle and bombing, for which the fleet had been constructed, and a huge success as well for the pyramidal formation which made of each squadron a veritable flying fortress, impregnable, almost, to air attack as long as it was not broken. Confidence was now felt that serious resistance from the German fighting aircraft could be discounted. Losses were made good, and the battle air-fleet was again intact, though slightly less efficient owing to the somewhat inferior skill of the reserve pilots.

It was certain that England would be attacked that night, and it was decided that the bombing-squadrons would go out again the next morning, late, to renew their assault.

The attack came. London received the main blow, and otherwise the enemy's energy was bestowed on the industrial Midlands. Italian bombers were used, flying from German bases. The blow was heavy and immense damage was done. There was great loss of civilian life. But in the main the system of defence justified itself, and of the many thousands who were killed and injured in no case was it mass destruction of life, but an aggregate of isolated instances.

The enemy bombers were computed at 600, of which 60 were left behind, the greater number battered out of recognition by falling in flames, and a few obliged to land. The enterprise had been expensive. But the great thing was that England was not demoralized and felt eager to continue the struggle.

England's bombing-fleet was prepared and loaded up during the night in readiness for the midday attack on German cities which had been decided on. But two hours after daylight word came, relayed by wireless, from the scouts circling in the sub-stratosphere that the German bombers had taken the air, evidently intent on dealing a second blow against England before she had recovered from the first, on the principle of no respite.

This was the hoped-for opportunity, almost too good to be true, and the battle air-fleet of England rose to the attack.

The first large-scale air battle in the history of the world took place over the Netherlands and the Straits of Dover. It was fought to a finish, not because the enemy did not want to break it off, but because they were not allowed to. The scouts had signalled the enemy's numbers and formation, and corres-

ponding tactics were employed by England's battle-fleet. It flew higher, knowing the enemy's height, and it extended itself, always in the pyramidal squadron formation, to overlap the enemy's flank. The German bombers had neither been equipped, nor trained, for the purpose of a battle of this sort. They had neither the armament nor the armouring and were at a disadvantage. They were bomb-carriers only, and their light machine-guns, even with intense rapidity of fire and explosive bullets, were no match for the eight-ounce projectiles which their opponents fired, each a shell in miniature. The Germans were outflown and outfired.

The carnage was fearful. Both sides took a terrible toll of each other. But whereas the British losses amounted to thirty per cent., the German percentage of loss was seventy, and her air power crumpled like a pricked bladder.

The immediate result, as soon as the news was flashed round the world, was that the peace was universally broken. The Little Entente States were emboldened to attack Italy who withdrew her Air Force to meet the onslaught. France joined in on the other side. Poland attacked the Little Entente. Russia attacked Poland. Japan air-raided Eastern Siberia. China struck against Japan. A powder-train had long been laid, and at last it had been touched off.

For England the war was over and she stood apart, busily repairing the mischief which had been wrought and replenishing her Air Forces. In the universal madness, amidst the clashes in the air and the slaughter on the ground, she stood sanely in isolation, unable to intervene, powerless to prevent it. Like an all-in wrestling-mill wherein the contestants are too interlocked and crazed to break apart, so was this international struggle, and meanwhile civilization rocked.

For a week the pounding went on, the blows becoming

more and more feeble as exhaustion set in. Territory was overrun, cities were laid flat, and still there emerged no victor by whose insistence a halt might have been called. The struggle was suicidal and could only terminate in the death of Continental Europe.

So patent was this to the only two big powers not engaged, England and the United States, that at last they stirred themselves in conjunction to stop the carnage. In agreement they issued a world ultimatum, pointing out that their own air power was intact while that of all others had dwindled to a low ebb. They demanded an instant cessation of hostilities everywhere on pain of immediate annihilating air action against each contesting country without discrimination. In order to show that force was behind these words, the United States, using the Transatlantic stepping-stones, transferred the major part of her own immensely powerful Air Force to England, prepared, in combination with the still strong air fleet of that country, to carry out the threat.

This had the desired effect. Unable to disentangle themselves from the murderous conflict, like exhausted heavyweight boxers in a clinch, some outside force, as that of a referee, could alone send them to their corners.

Like heavyweights also, they were glad of the interference. To their corners they went, still glaring at each other, to listen to the sentences of disqualification, the penalty awards, and the prohibitions, while the judges held the ring.

POSTSCRIPT. Year succeeded year in a world at peace. Universal disarmament by land, sea and air had been the preliminary step towards the millennium. To this, as a necessary consequence, followed the internationalization of civil avia-

tion so that air transport might no longer be an aid in disguise to aggressiveness.

The League of Nations was revived and reformed.

National delegations sat at Geneva as an advisory council to a Court of Equity, to bear witness to the facts of a dispute, as it affected each, to amass data bearing on all possible questions, and to inform their own public opinion.

The Court of Equity reigned supreme. It was not constituted on a basis of national representation. It consisted of men whose reputation, irrespective of race, was world wide for integrity, learning, jurisprudence and humanity.

To enforce the Court's decrees, if necessary, an international police force was created, the only military force on earth. It was an air police force. The internationalized civil aviation provided for it both the equipment and the personnel.

PRINTED BY
WESTERN PRINTING SERVICES LTD., BRISTOL

